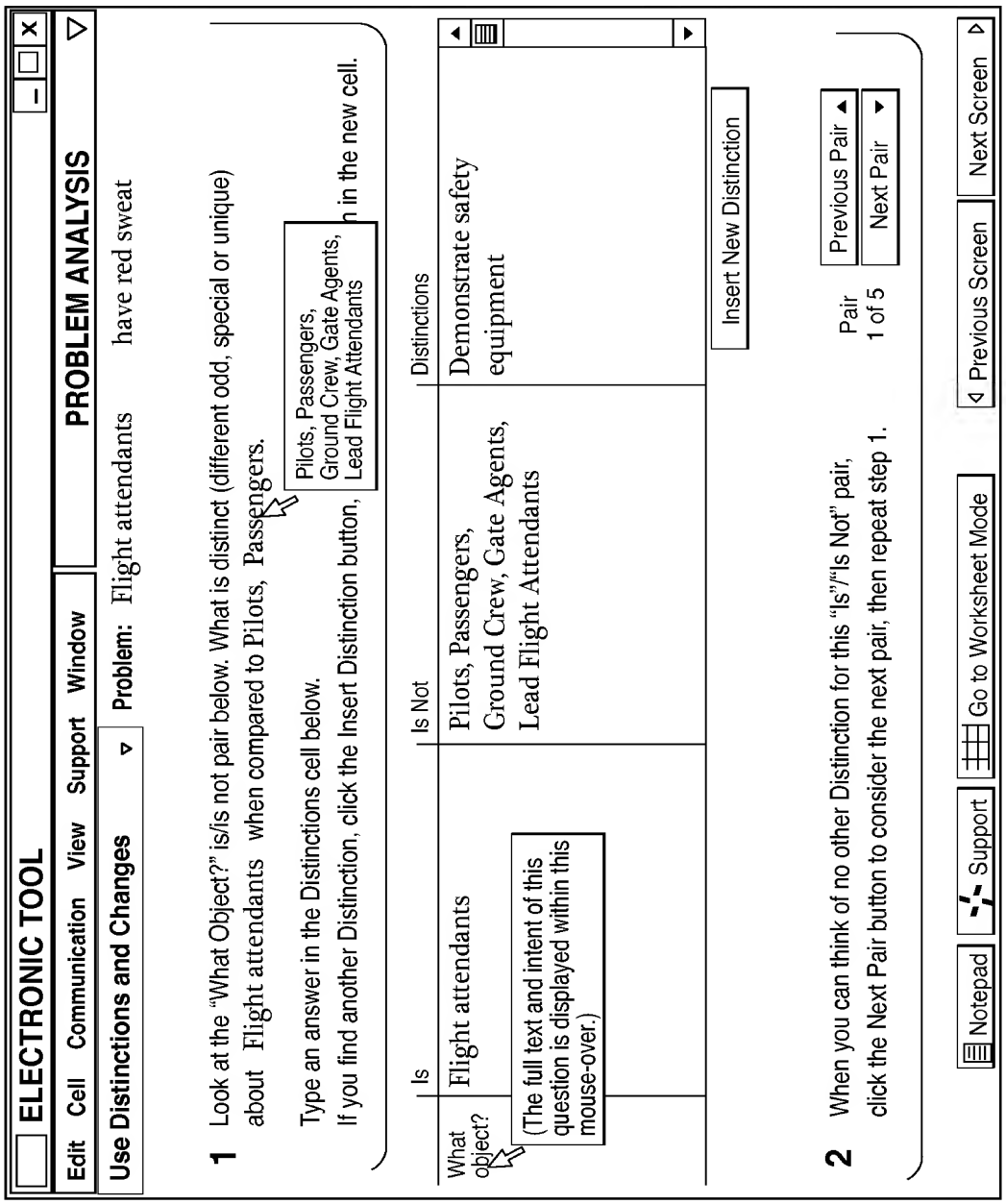
ELECTRONIC TOOL
Edit Cell Communication View Support Window
PROBLEM ANALYSIS
Use Distinctions and Changes
Problem: Flight attendants have red sweat
1 Look at the "What Object?" is/is not pair below. What is distinct (different odd, special or unique) about Flight attendants when compared to Pilots, Passengers.
Type an answer in the Distinctions cell below.
If you find another Distinction, click the Insert Distinction button,
Pilots, Passengers, Ground Crew, Gate Agents, Lead Flight Attendants
in the new cell.
Is
Is Not
Distinctions
What object?
Flight attendants
(The full text and intent of this question is displayed within this mouse-over.)
Pilots, Passengers, Ground Crew, Gate Agents, Lead Flight Attendants
Demonstrate safety equipment
Insert New Distinction
2 When you can think of no other Distinction for this "Is"/"Is Not" pair, click the Next Pair button to consider the next pair, then repeat step 1.
Pair 1 of 5
Previous Pair
Next Pair
Notepad
Support
Go to Worksheet Mode
Previous Screen
Next Screen

Fig. 84

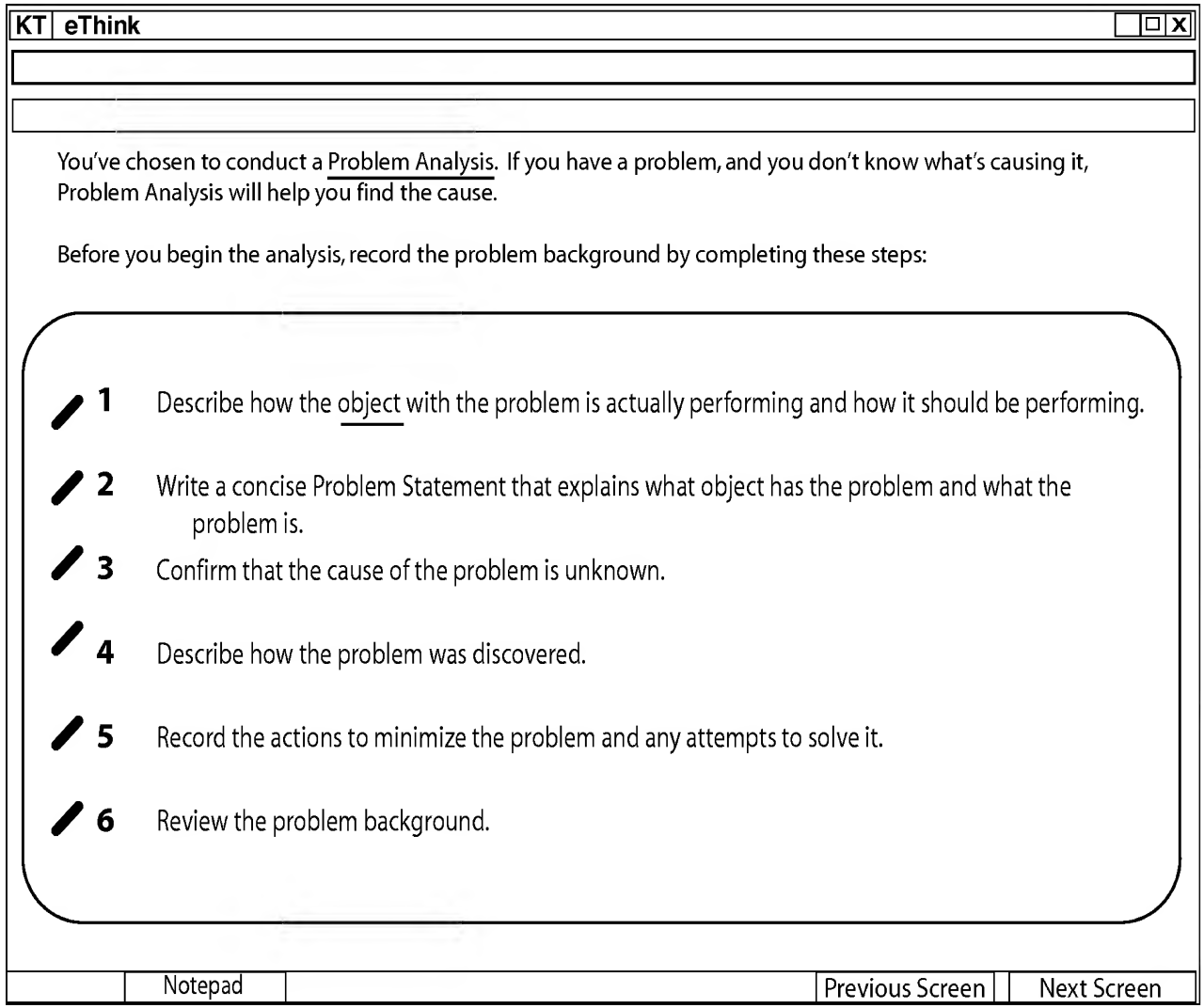
KT eThink
You've chosen to conduct a Problem Analysis. If you have a problem, and you don't know what's causing it, Problem Analysis will help you find the cause.
Before you begin the analysis, record the problem background by completing these steps:
1 Describe how the object with the problem is actually performing and how it should be performing.
2 Write a concise Problem Statement that explains what object has the problem and what the problem is.
3 Confirm that the cause of the problem is unknown.
4 Describe how the problem was discovered.
5 Record the actions to minimize the problem and any attempts to solve it.
6 Review the problem background.
Notepad
Previous Screen
Next Screen

Fig. 85

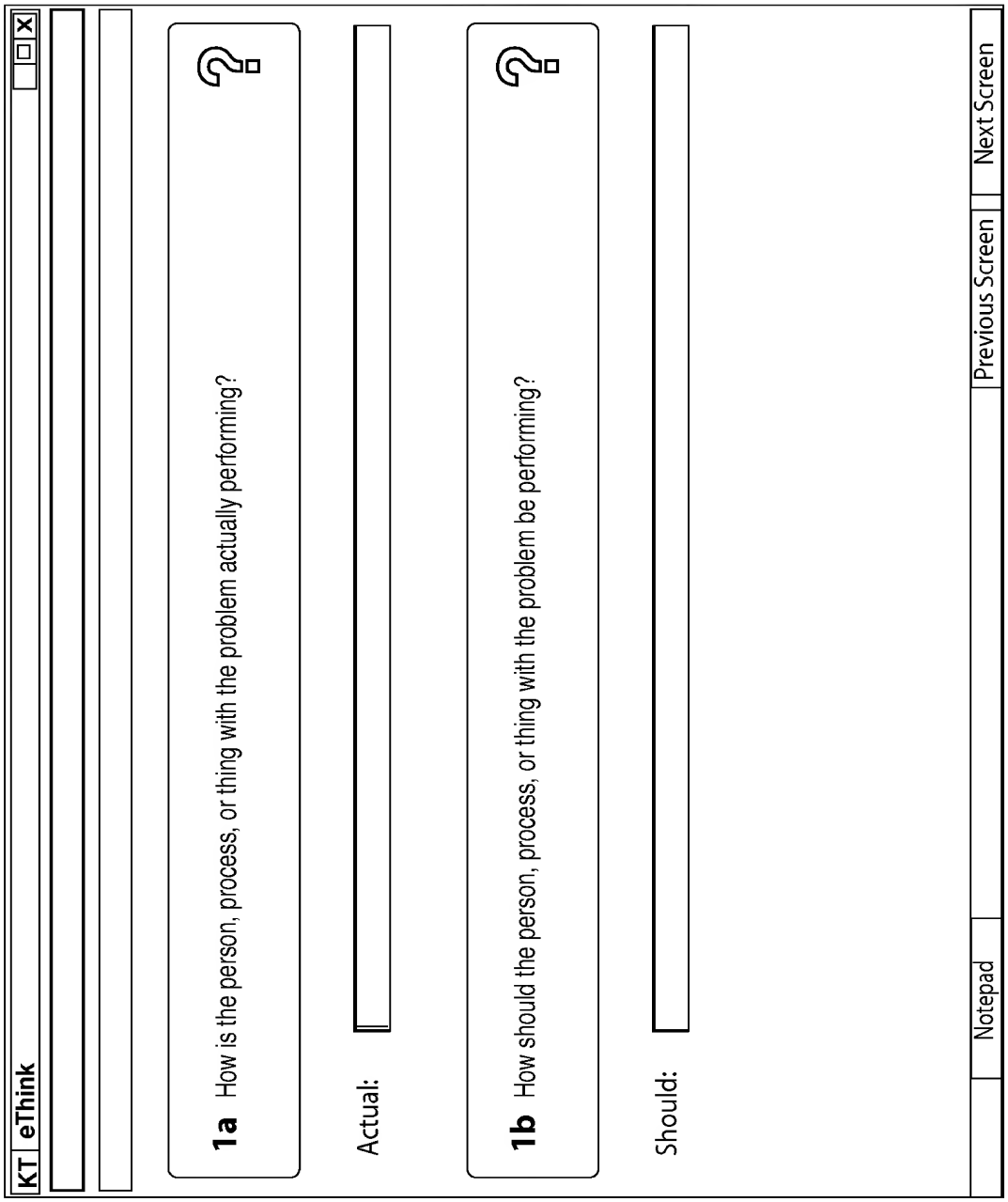
KT eThink
1a How is the person, process, or thing with the problem actually performing?
Actual:
1b How should the person, process, or thing with the problem be performing?
Should:
Notepad
Previous Screen
Next Screen

Fig. 86

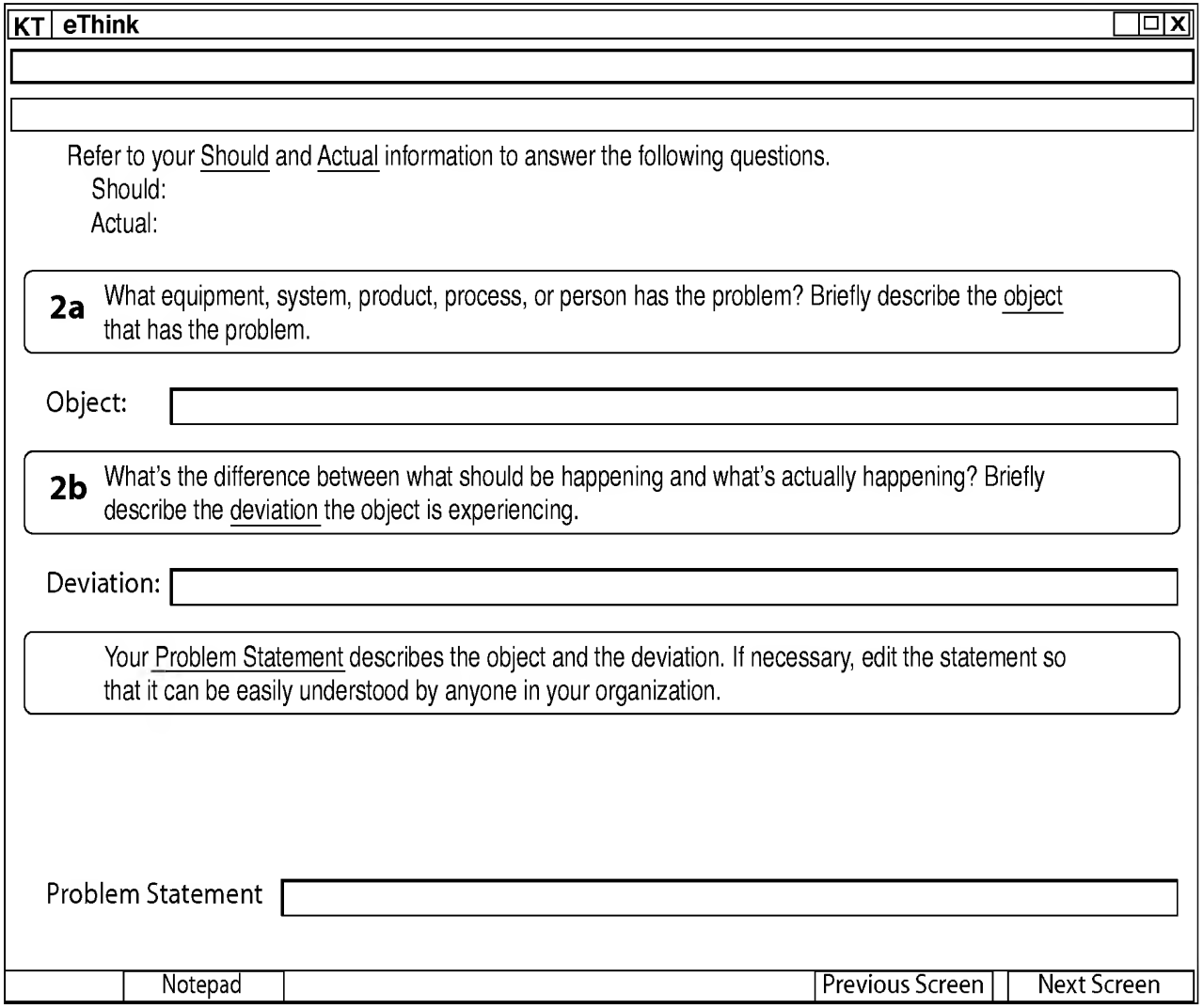
KT eThink
Refer to your Should and Actual information to answer the following questions.
Should:
Actual:
2a What equipment, system, product, process, or person has the problem? Briefly describe the object that has the problem.
Object:
2b What's the difference between what should be happening and what's actually happening? Briefly describe the deviation the object is experiencing.
Deviation:
Your Problem Statement describes the object and the deviation. If necessary, edit the statement so that it can be easily understood by anyone in your organization.
Problem Statement
Notepad
Previous Screen
Next Screen

Fig. 87

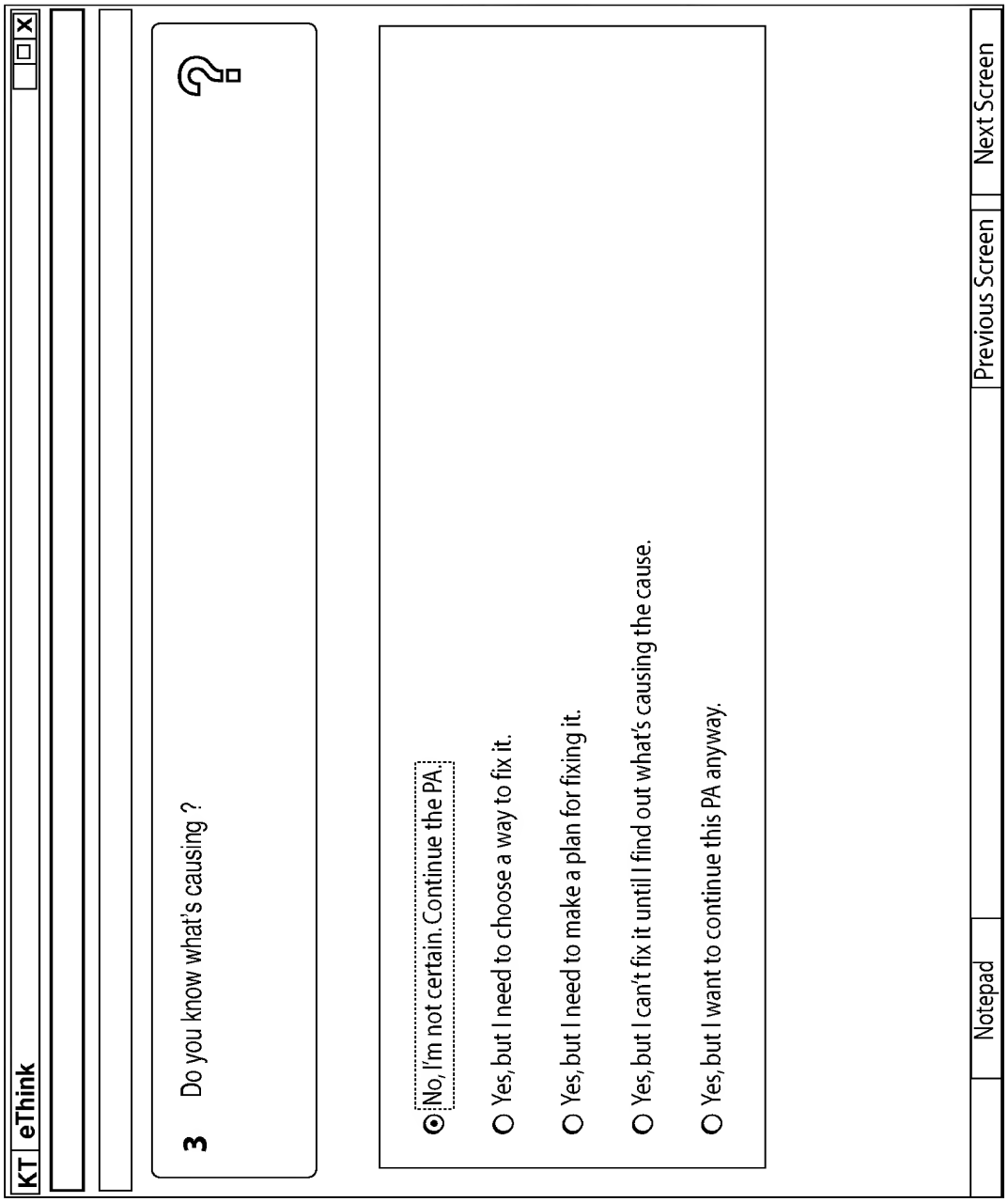
KT eThink
3 Do you know what's causing ?
No, I'm not certain. Continue the PA.
Yes, but I need to choose a way to fix it.
Yes, but I need to make a plan for fixing it.
Yes, but I can't fix it until I find out what's causing the cause.
Yes, but I want to continue this PA anyway.
Notepad
Previous Screen
Next Screen

Fig. 88

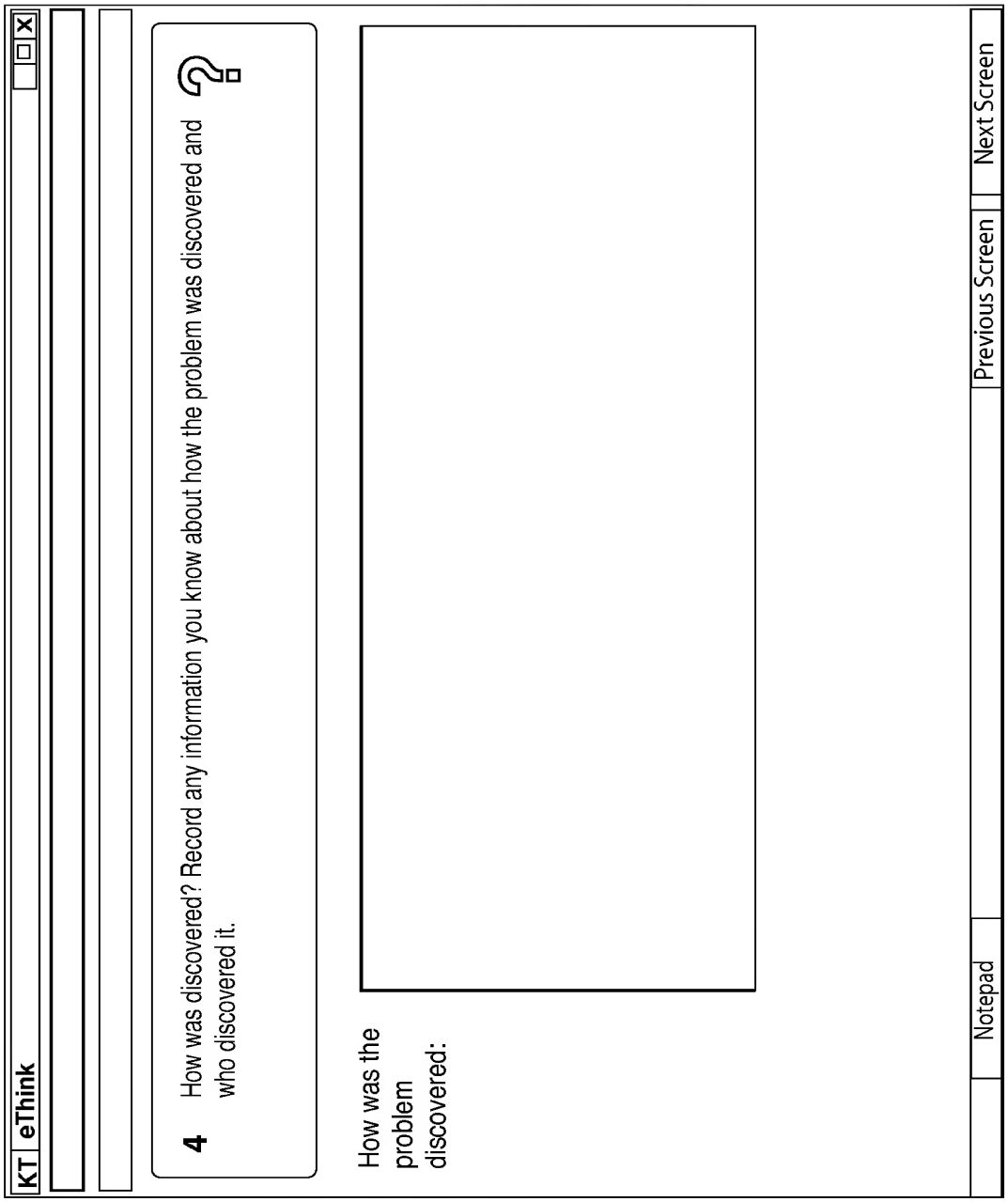
KT eThink
4 How was discovered? Record any information you know about how the problem was discovered and who discovered it.
How was the problem discovered:
Notepad
Previous Screen
Next Screen

Fig. 89

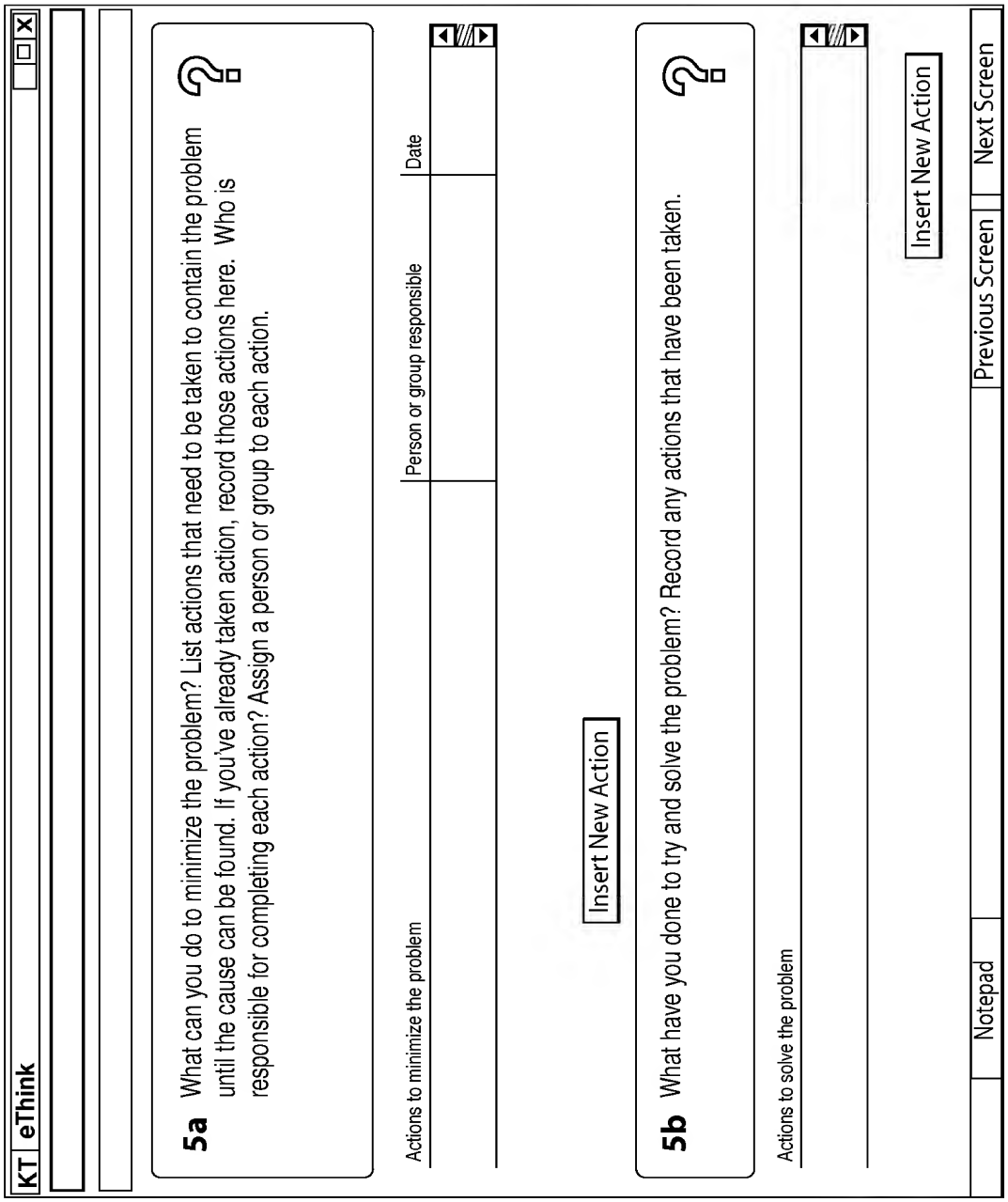
KT eThink
5a What can you do to minimize the problem? List actions that need to be taken to contain the problem until the cause can be found. If you've already taken action, record those actions here. Who is responsible for completing each action? Assign a person or group to each action.
Actions to minimize the problem
Person or group responsible
Date
Insert New Action
5b What have you done to try and solve the problem? Record any actions that have been taken.
Actions to solve the problem
Insert New Action
Notepad
Previous Screen
Next Screen

Fig. 90

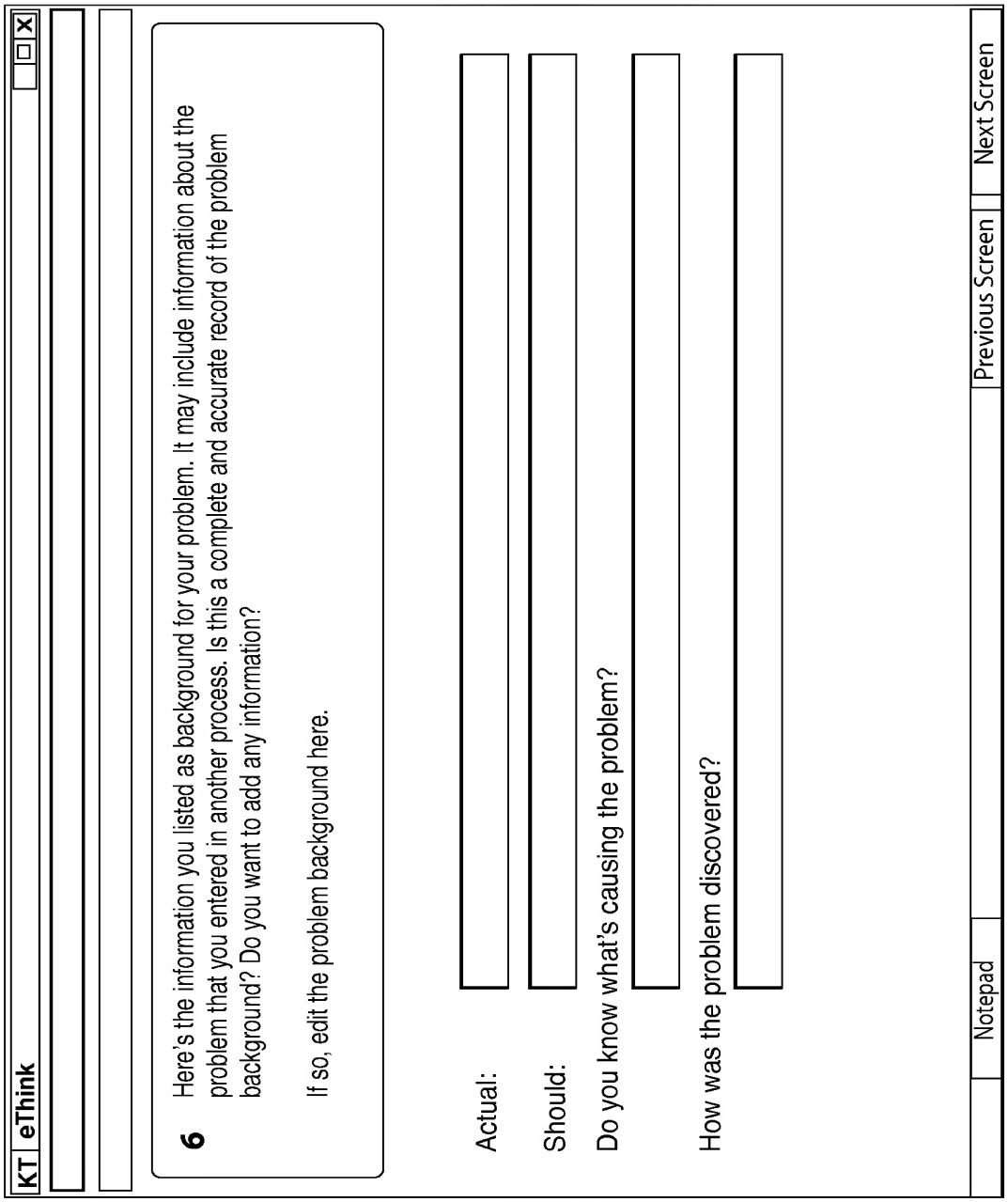
KT eThink
6
Here's the information you listed as background for your problem. It may include information about the problem that you entered in another process. Is this a complete and accurate record of the problem background? Do you want to add any information?
If so, edit the problem background here.
Actual:
Should:
Do you know what's causing the problem?
How was the problem discovered?
Notepad
Previous Screen
Next Screen

Fig. 91

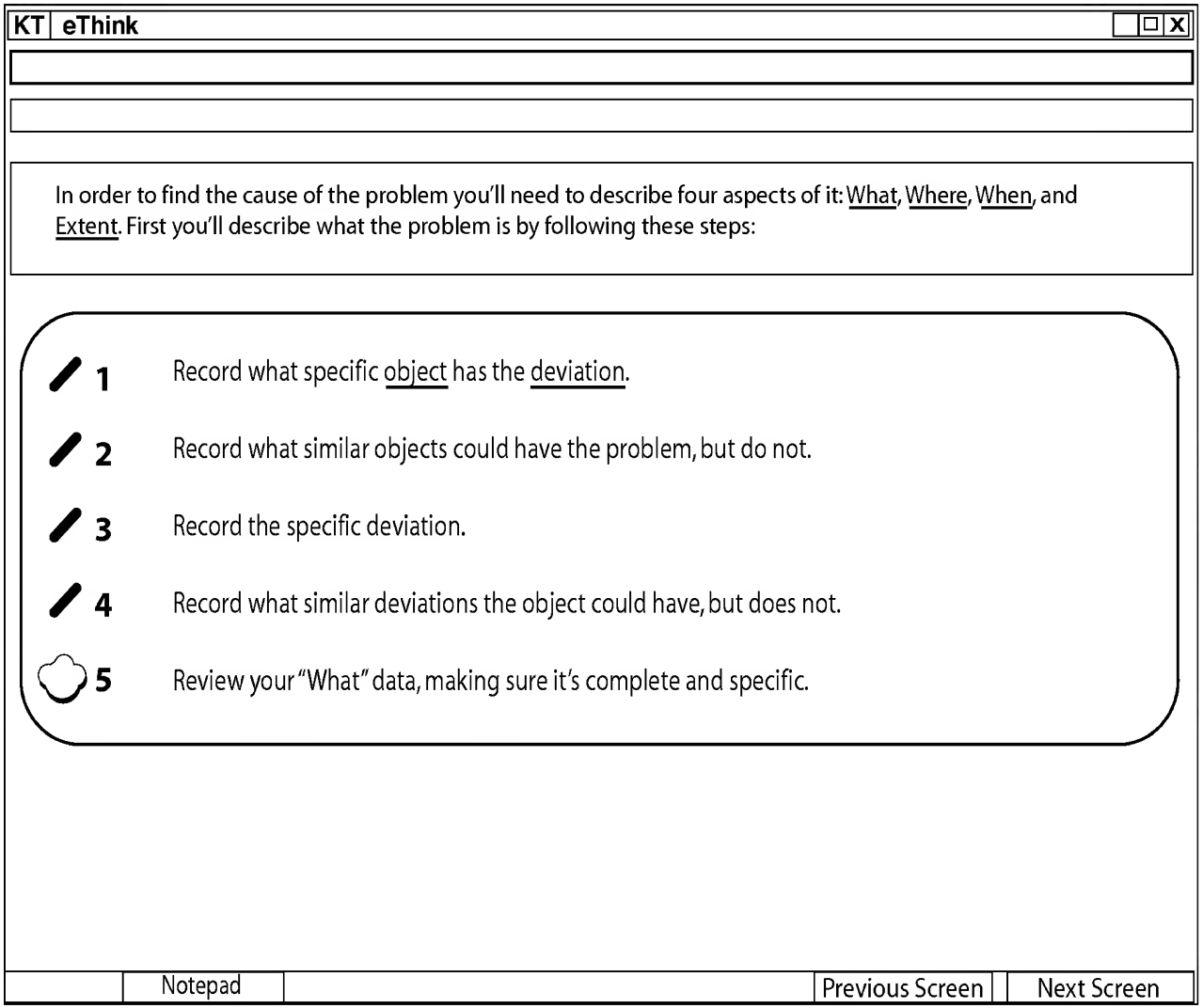
KT eThink
In order to find the cause of the problem you'll need to describe four aspects of it: What, Where, When, and Extent. First you'll describe what the problem is by following these steps:
1 Record what specific object has the deviation.
2 Record what similar objects could have the problem, but do not.
3 Record the specific deviation.
4 Record what similar deviations the object could have, but does not.
5 Review your "What" data, making sure it's complete and specific.
Notepad
Previous Screen
Next Screen

Fig. 92

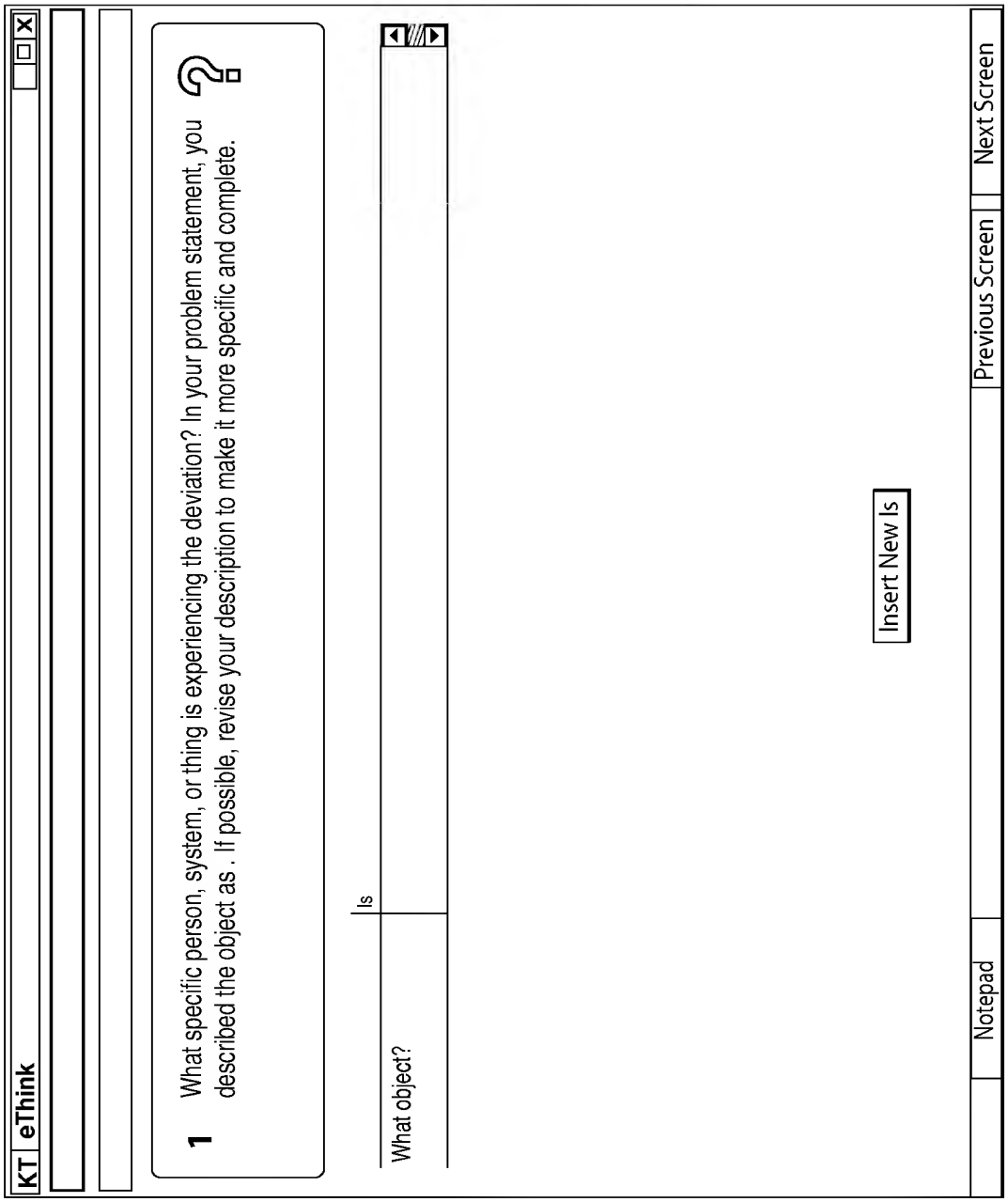
KT eThink
1
What specific person, system, or thing is experiencing the deviation? In your problem statement, you described the object as . If possible, revise your description to make it more specific and complete.
Is
What object?
Insert New Is
Notepad
Previous Screen
Next Screen

Fig. 93

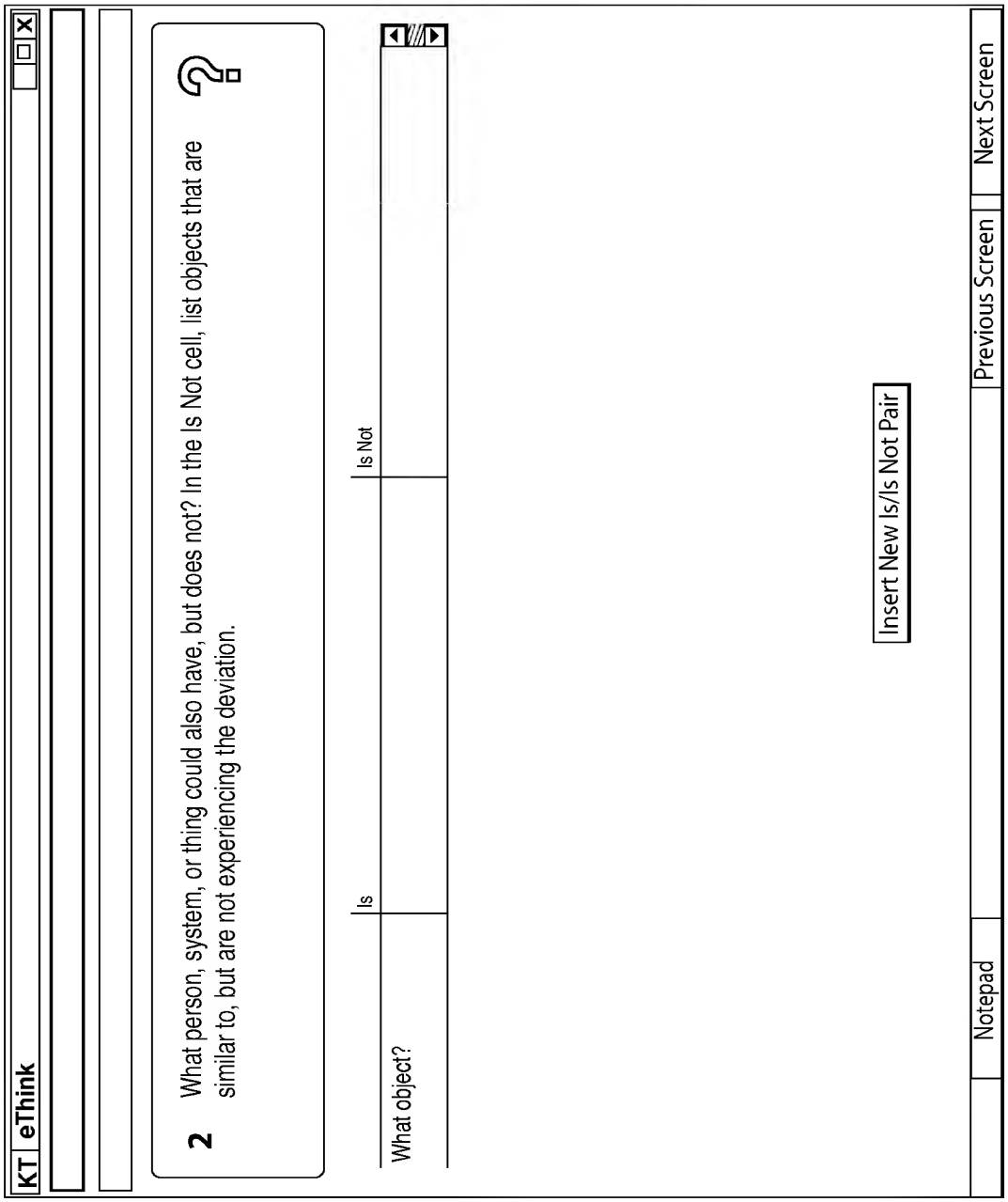
KT eThink
2
What person, system, or thing could also have, but does not? In the Is Not cell, list objects that are similar to, but are not experiencing the deviation.
What object?
Is
Is Not
Insert New Is/Is Not Pair
Notepad
Previous Screen
Next Screen

Fig. 94

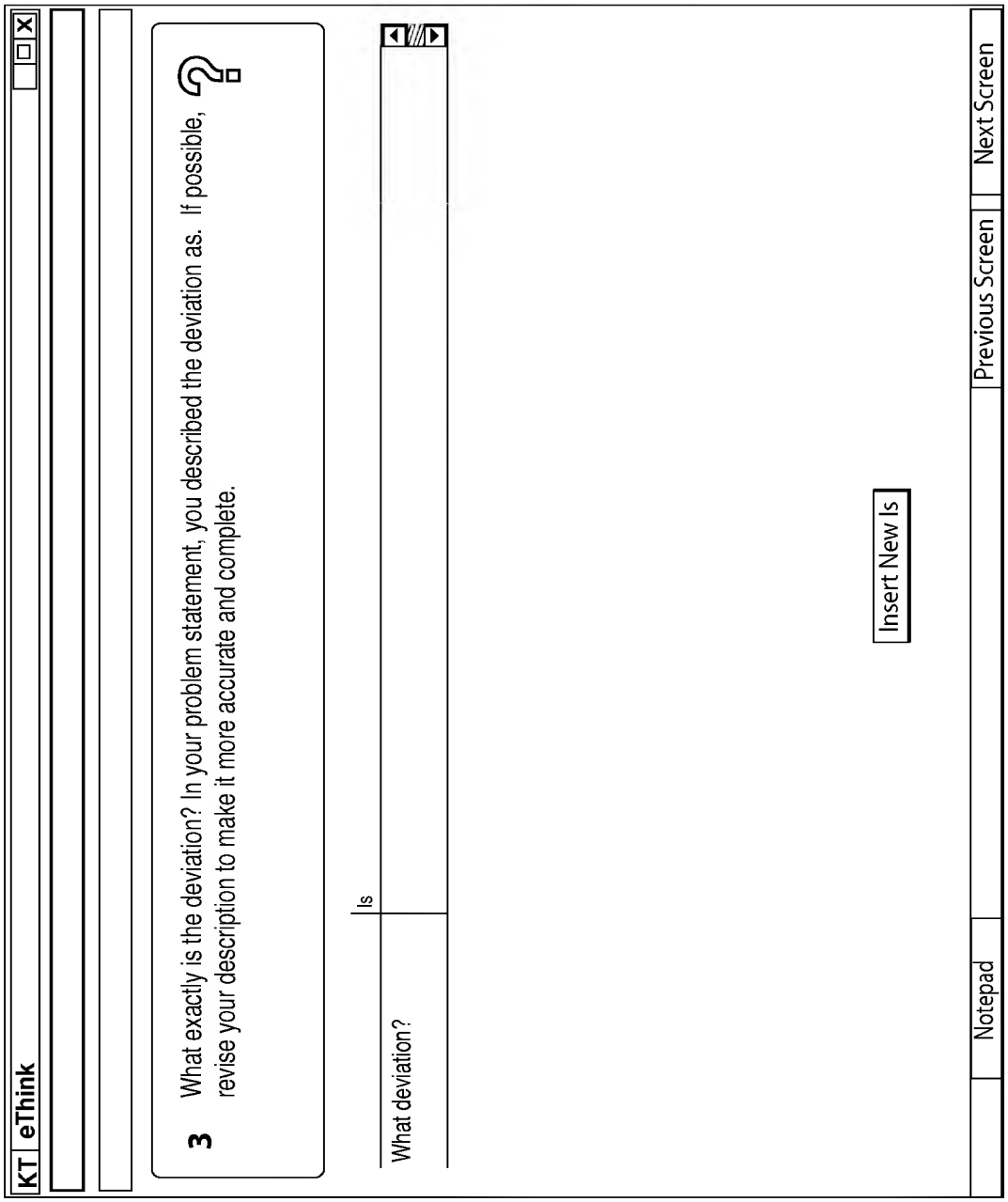
KT eThink
3
What exactly is the deviation? In your problem statement, you described the deviation as. If possible, revise your description to make it more accurate and complete.
Is
What deviation?
Insert New Is
Notepad
Previous Screen
Next Screen

Fig. 95

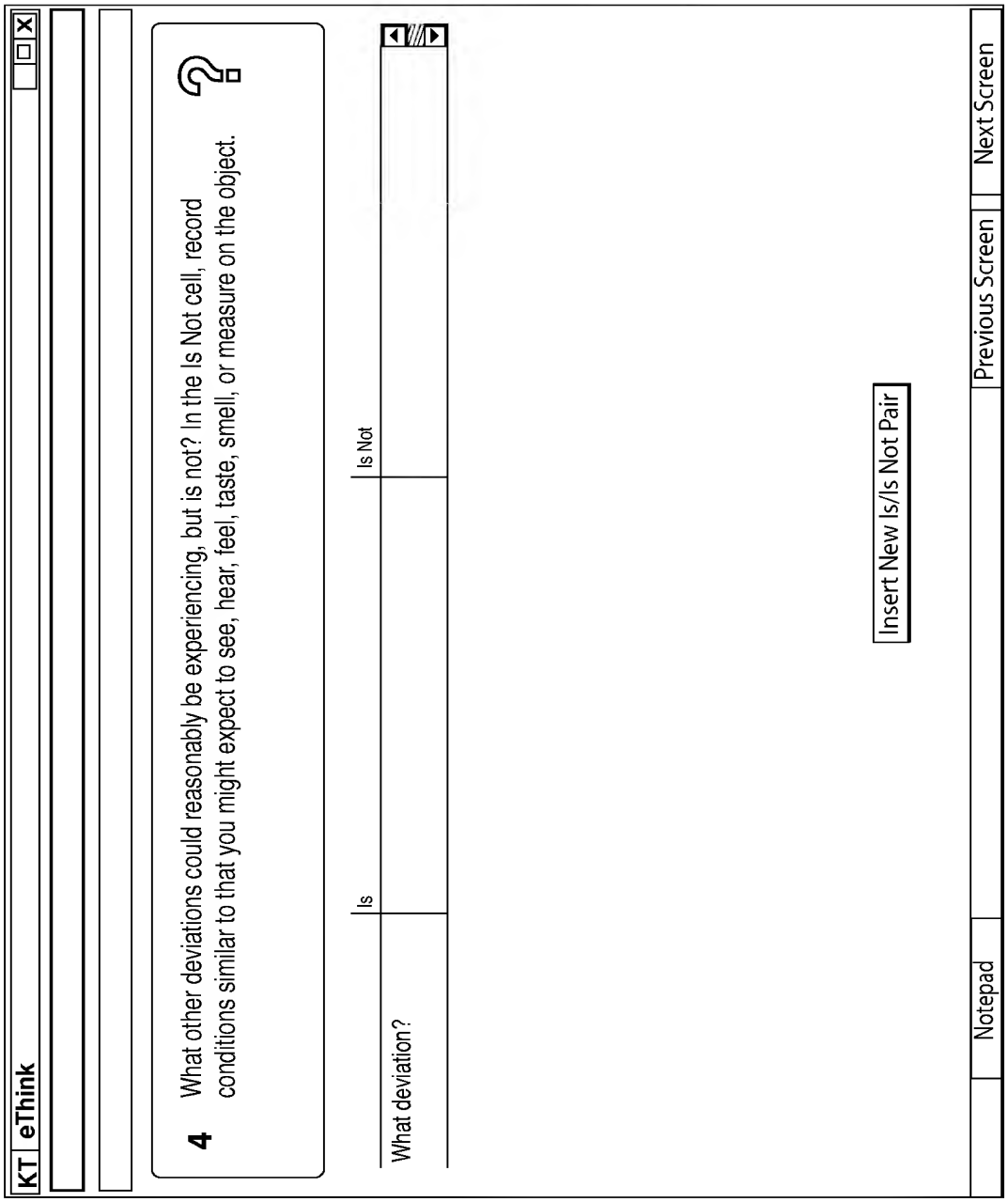
KT eThink
4
What other deviations could reasonably be experiencing, but is not? In the Is Not cell, record conditions similar to that you might expect to see, hear, feel, taste, smell, or measure on the object.
Is
Is Not
What deviation?
Insert New Is/Is Not Pair
Notepad
Previous Screen
Next Screen

Fig. 96

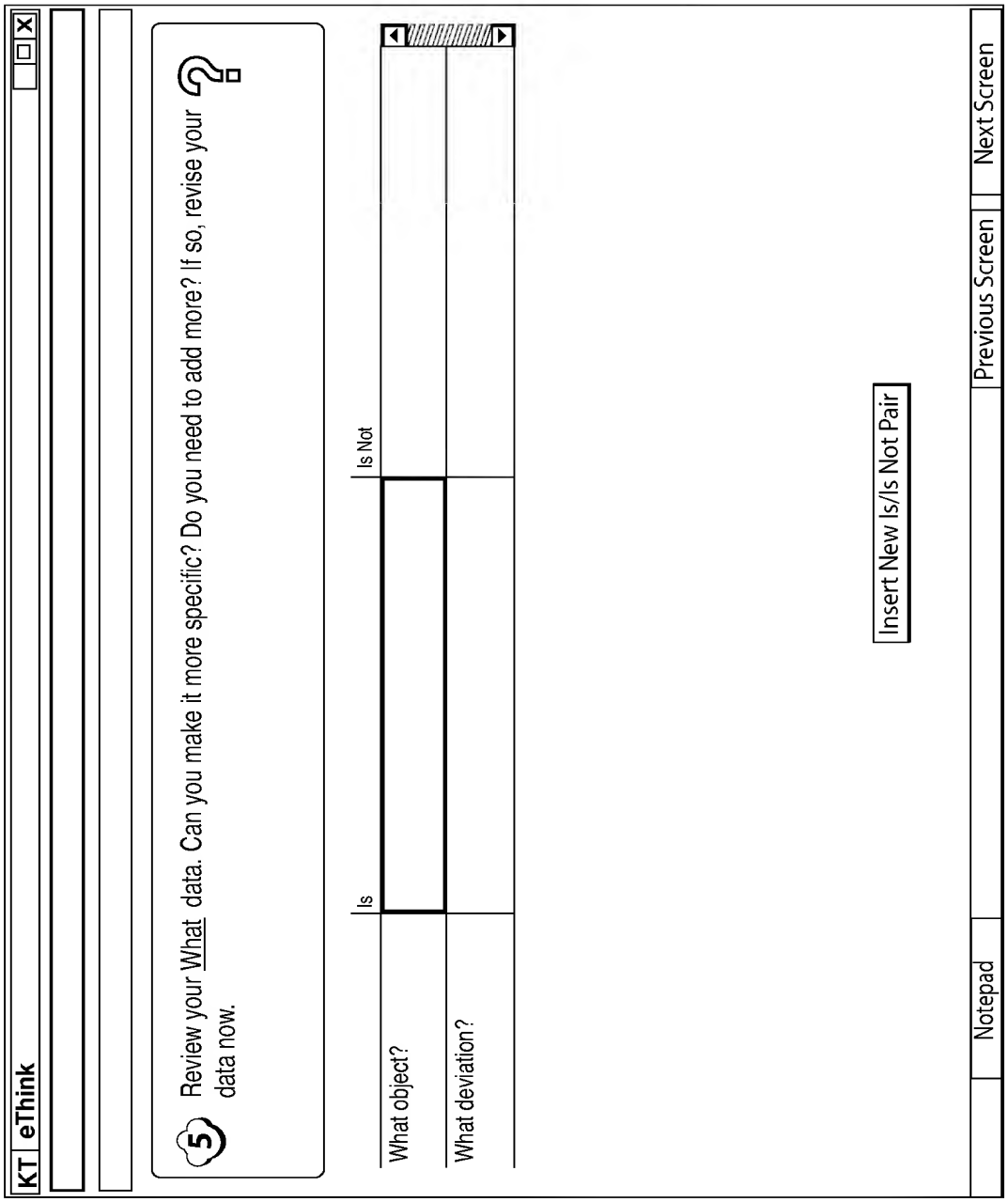
KT eThink
5
Review your What data. Can you make it more specific? Do you need to add more? If so, revise your data now.
Is
Is Not
What object?
What deviation?
Insert New Is/Is Not Pair
Notepad
Previous Screen
Next Screen

Fig. 97

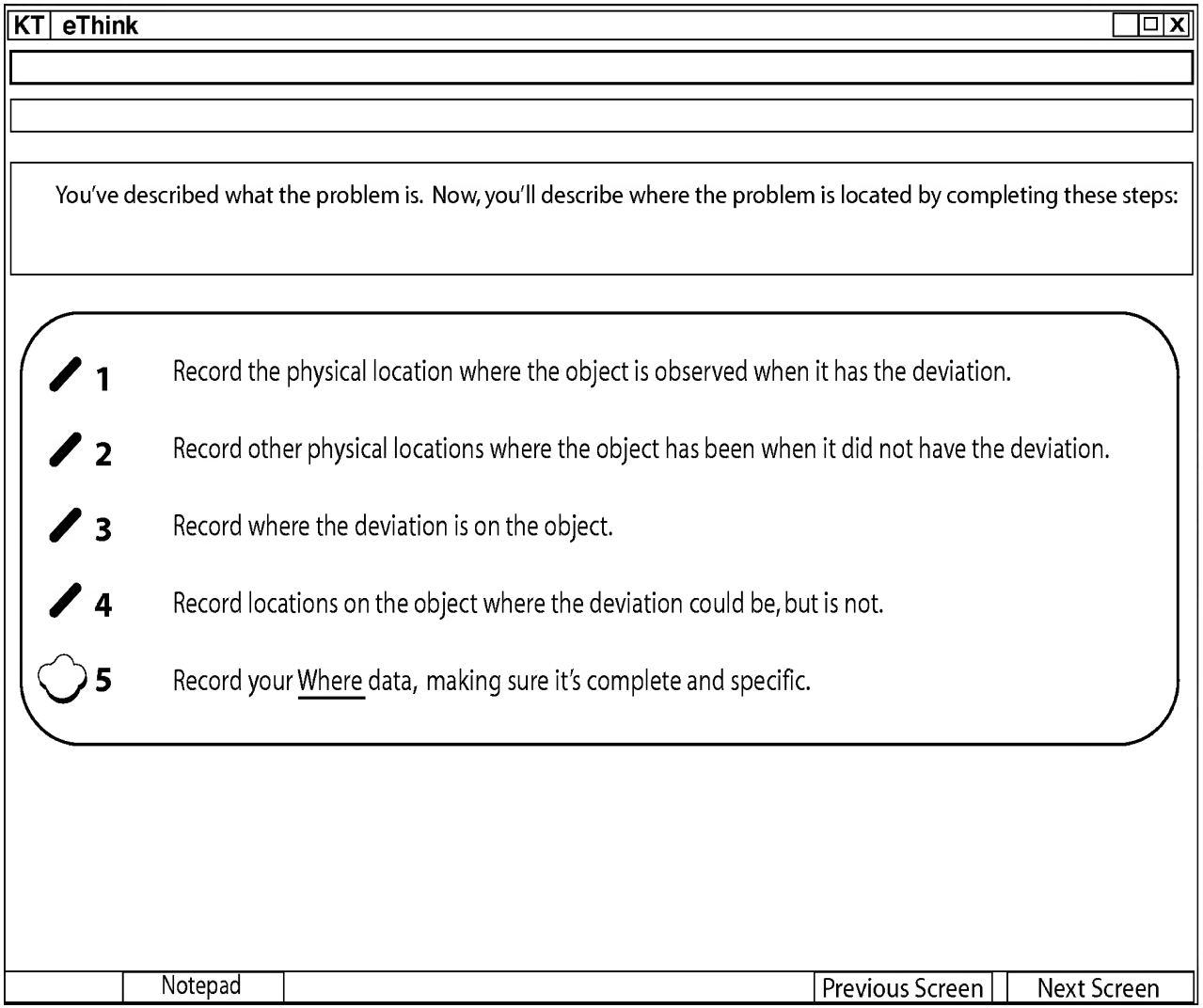
KT eThink
You've described what the problem is. Now, you'll describe where the problem is located by completing these steps:
1 Record the physical location where the object is observed when it has the deviation.
2 Record other physical locations where the object has been when it did not have the deviation.
3 Record where the deviation is on the object.
4 Record locations on the object where the deviation could be, but is not.
5 Record your Where data, making sure it's complete and specific.
Notepad
Previous Screen
Next Screen

Fig. 98

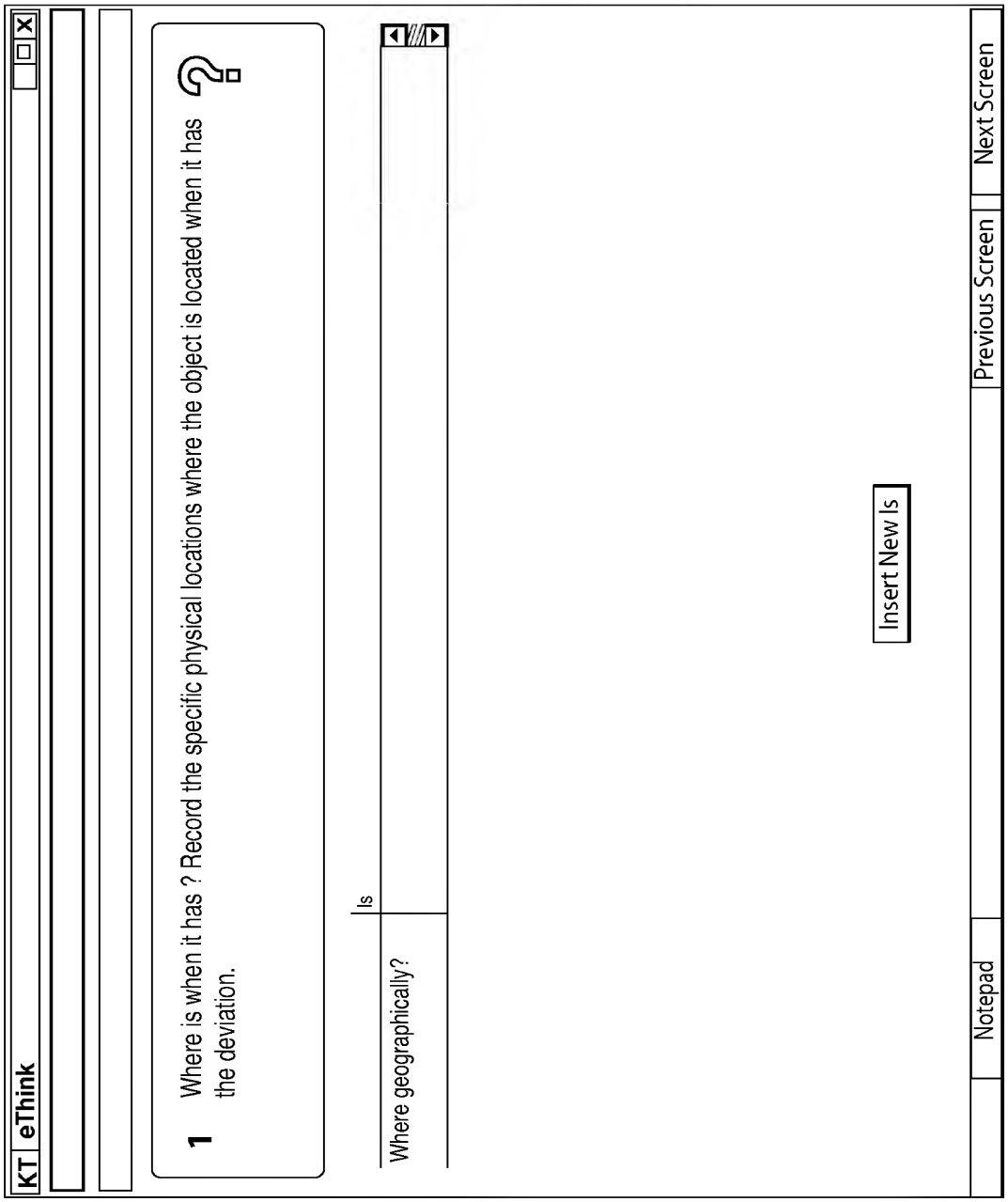
KT eThink
1
Where is when it has ? Record the specific physical locations where the object is located when it has the deviation.
Is
Where geographically?
Insert New Is
Notepad
Previous Screen
Next Screen

Fig. 99

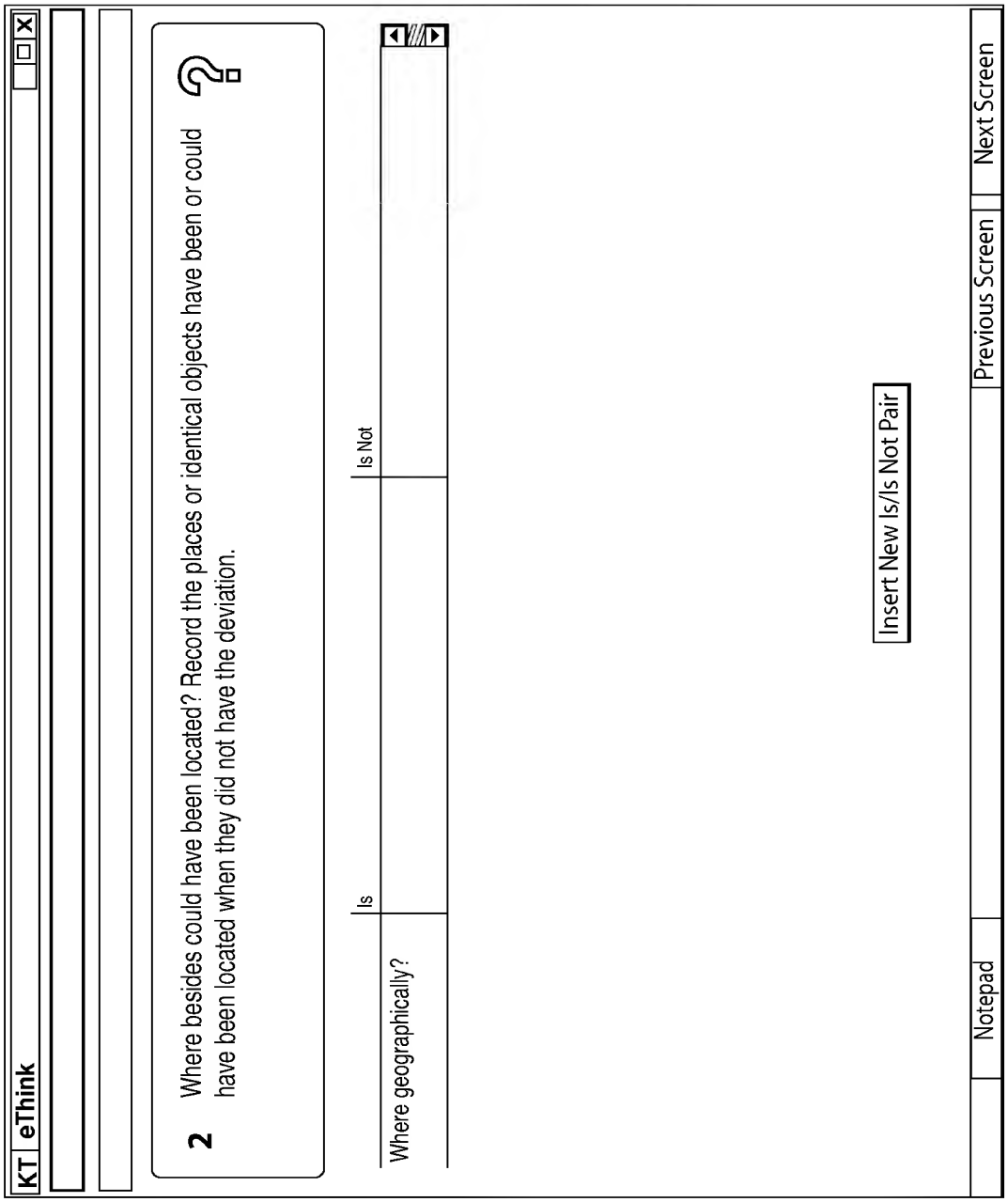
KT eThink
2
Where besides could have been located? Record the places or identical objects have been or could have been located when they did not have the deviation.
Is
Is Not
Where geographically?
Insert New Is/Is Not Pair
Notepad
Previous Screen
Next Screen

Fig. 100

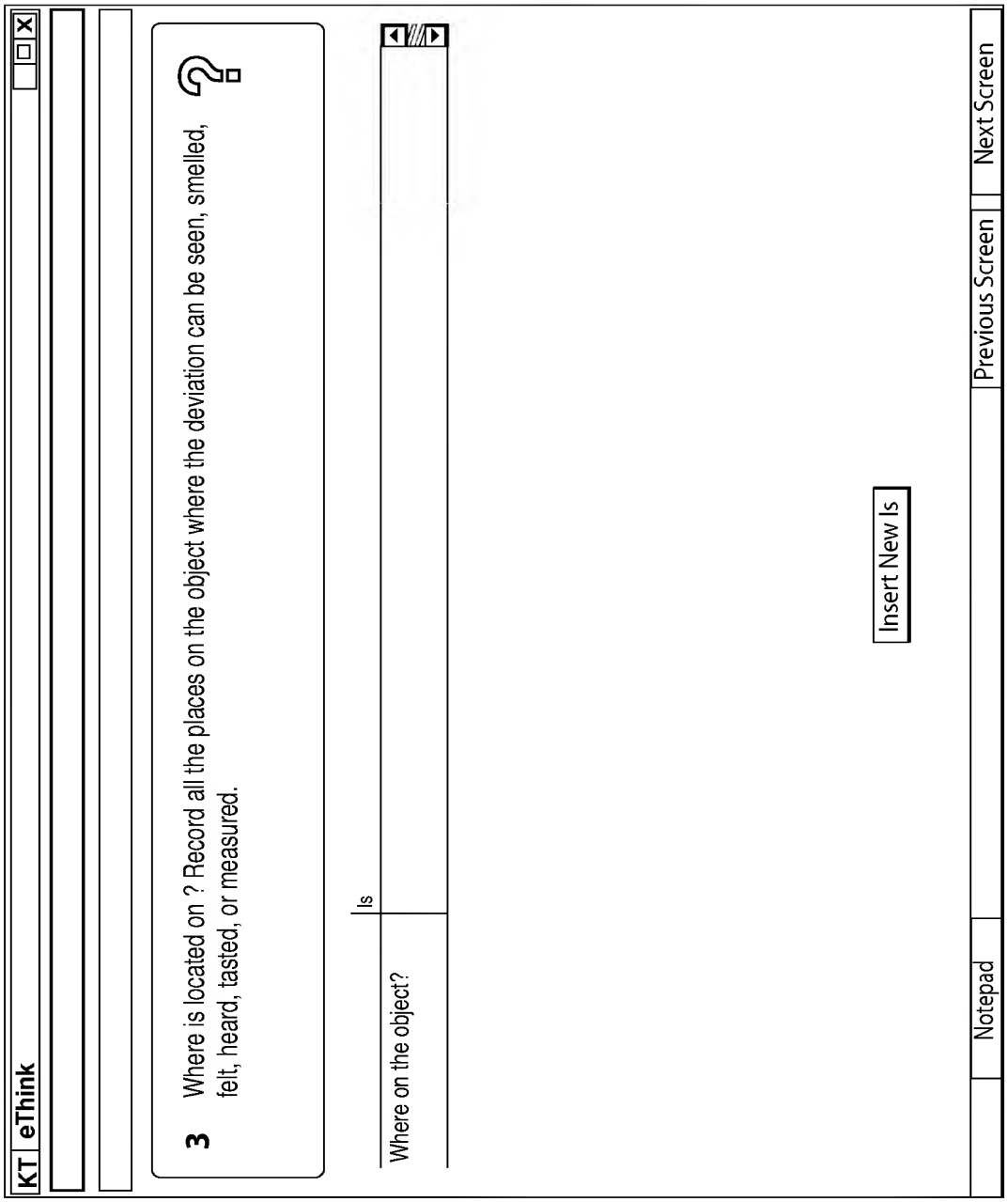
KT eThink
3 Where is located on ? Record all the places on the object where the deviation can be seen, smelled, felt, heard, tasted, or measured.
Is
Where on the object?
Insert New Is
Notepad
Previous Screen
Next Screen

Fig. 101

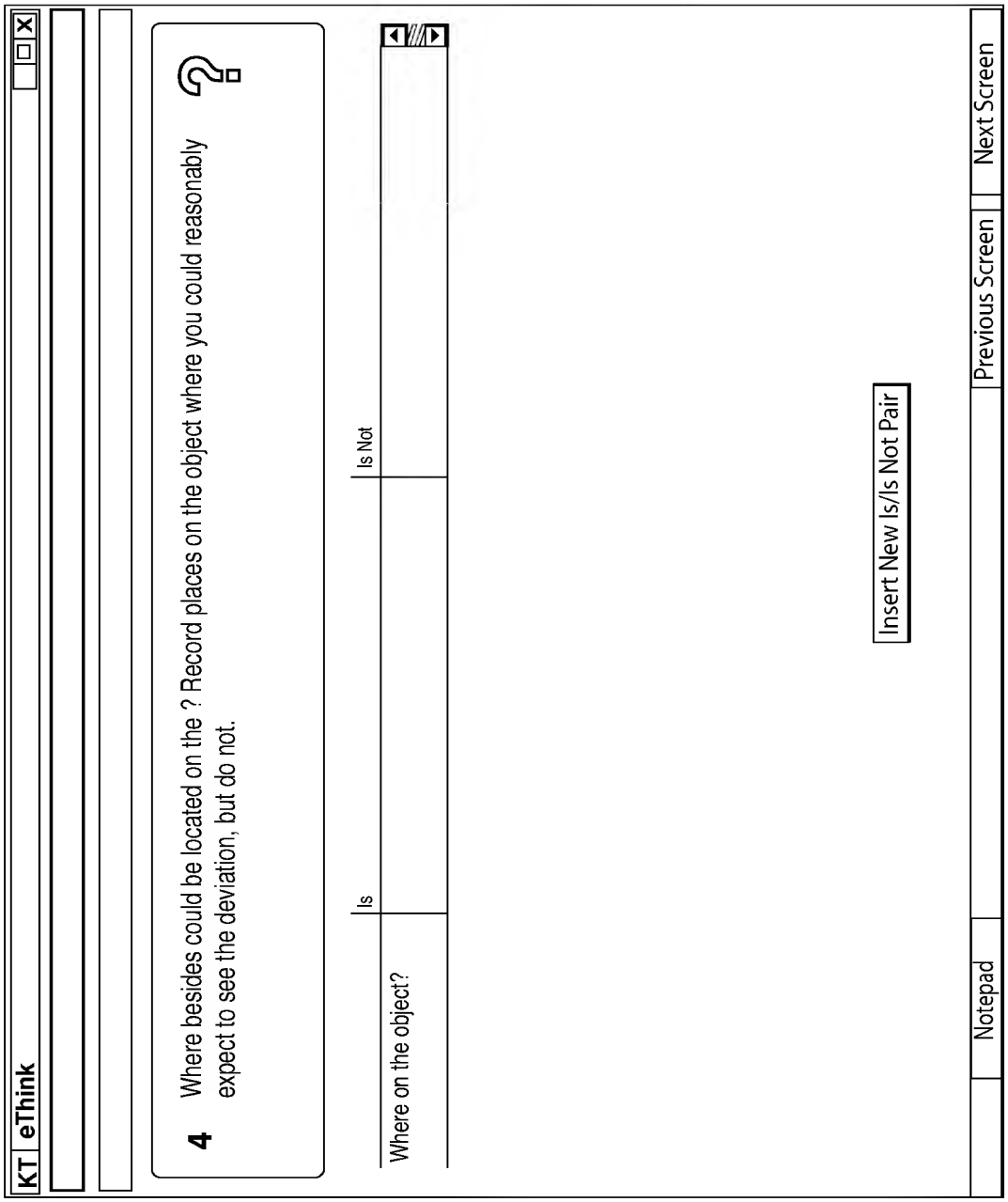
KT eThink
4
Where besides could be located on the ? Record places on the object where you could reasonably expect to see the deviation, but do not.
Where on the object?
Is
Is Not
Insert New Is/Is Not Pair
Notepad
Previous Screen
Next Screen

Fig. 102

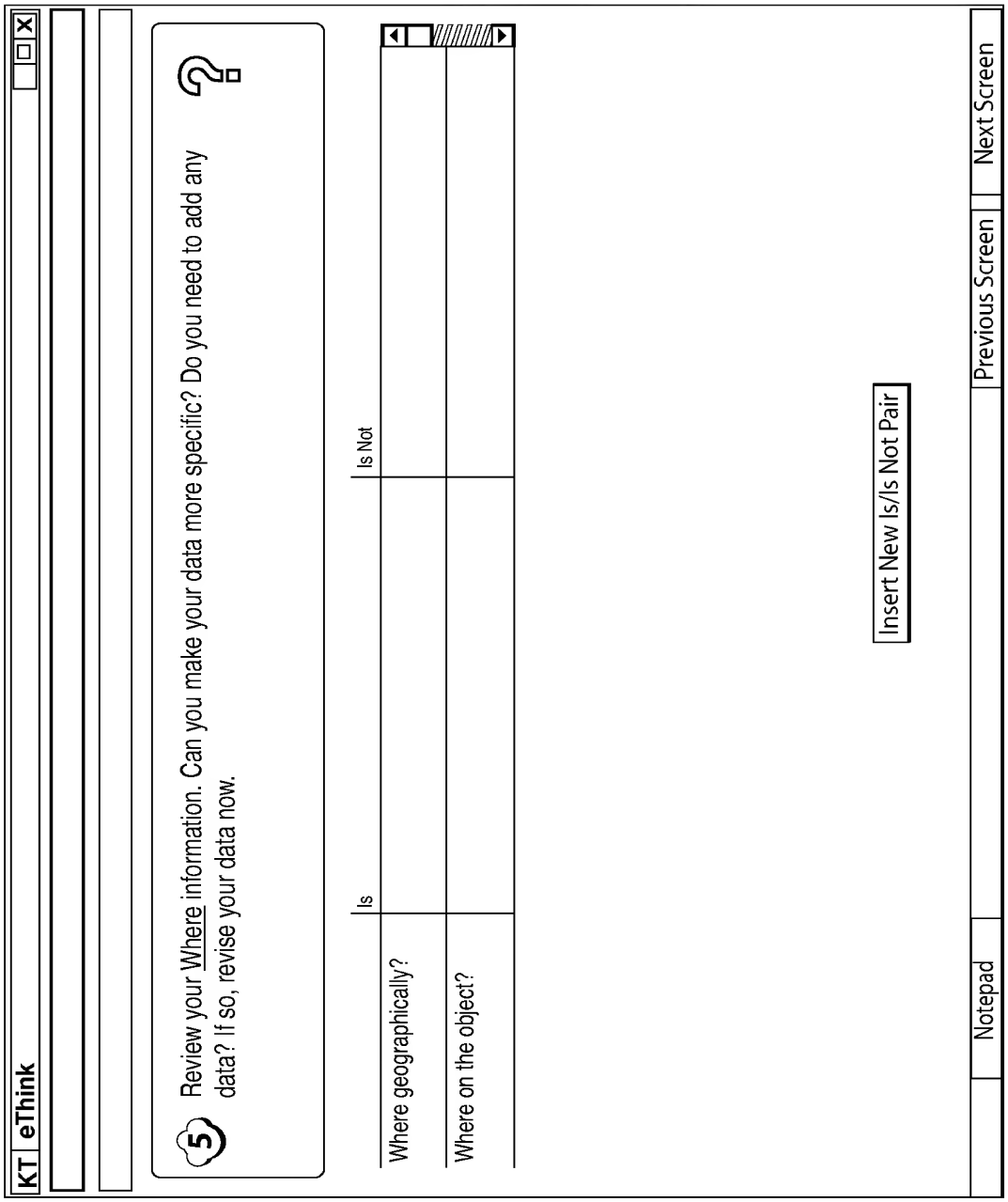
KT eThink
5
Review your Where information. Can you make your data more specific? Do you need to add any data? If so, revise your data now.
Is
Is Not
Where geographically?
Where on the object?
Insert New Is/Is Not Pair
Notepad
Previous Screen
Next Screen

Fig. 103

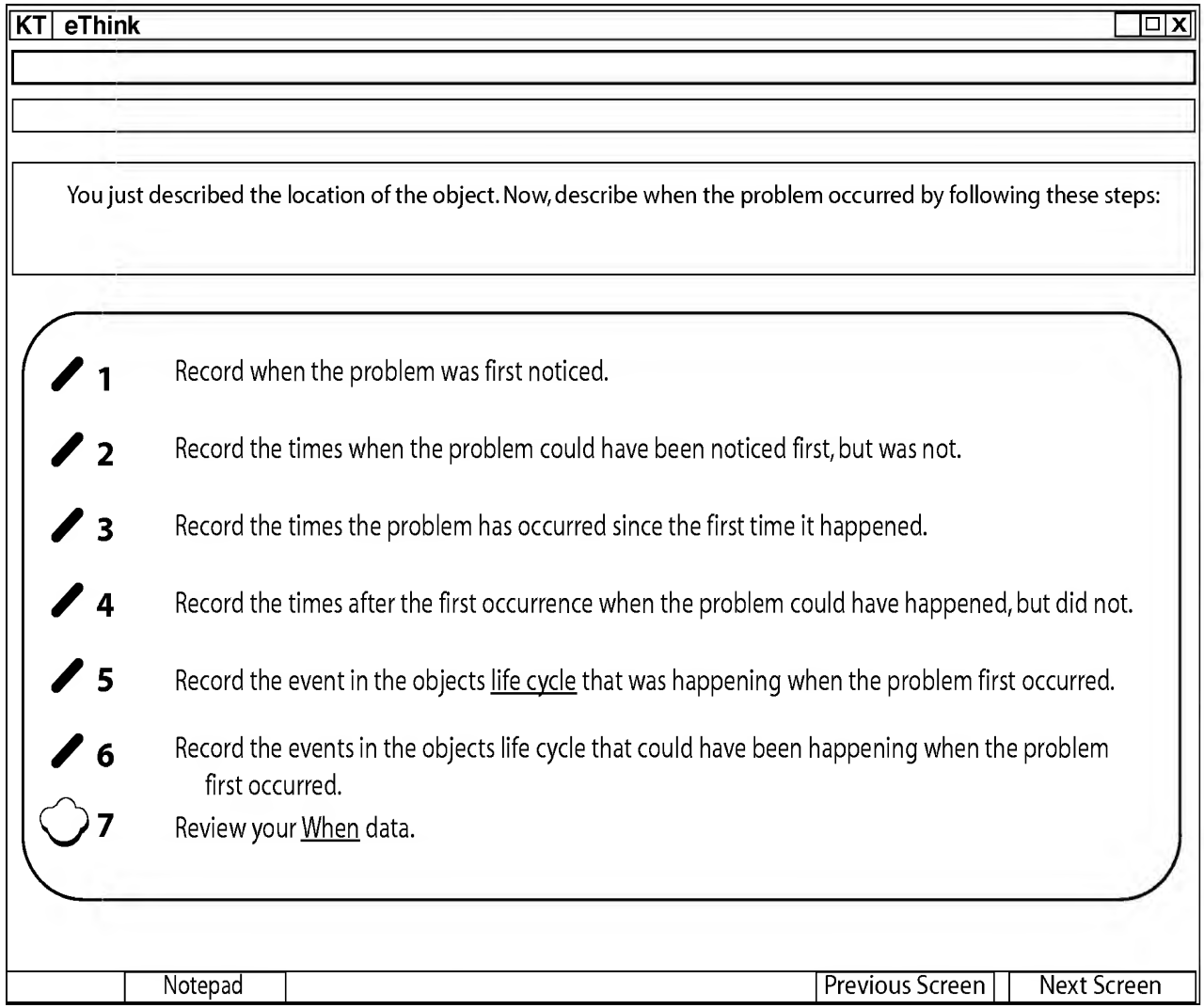
KT eThink
You just described the location of the object. Now, describe when the problem occurred by following these steps:
1 Record when the problem was first noticed.
2 Record the times when the problem could have been noticed first, but was not.
3 Record the times the problem has occurred since the first time it happened.
4 Record the times after the first occurrence when the problem could have happened, but did not.
5 Record the event in the objects life cycle that was happening when the problem first occurred.
6 Record the events in the objects life cycle that could have been happening when the problem first occurred.
7 Review your When data.
Notepad
Previous Screen
Next Screen

Fig. 104

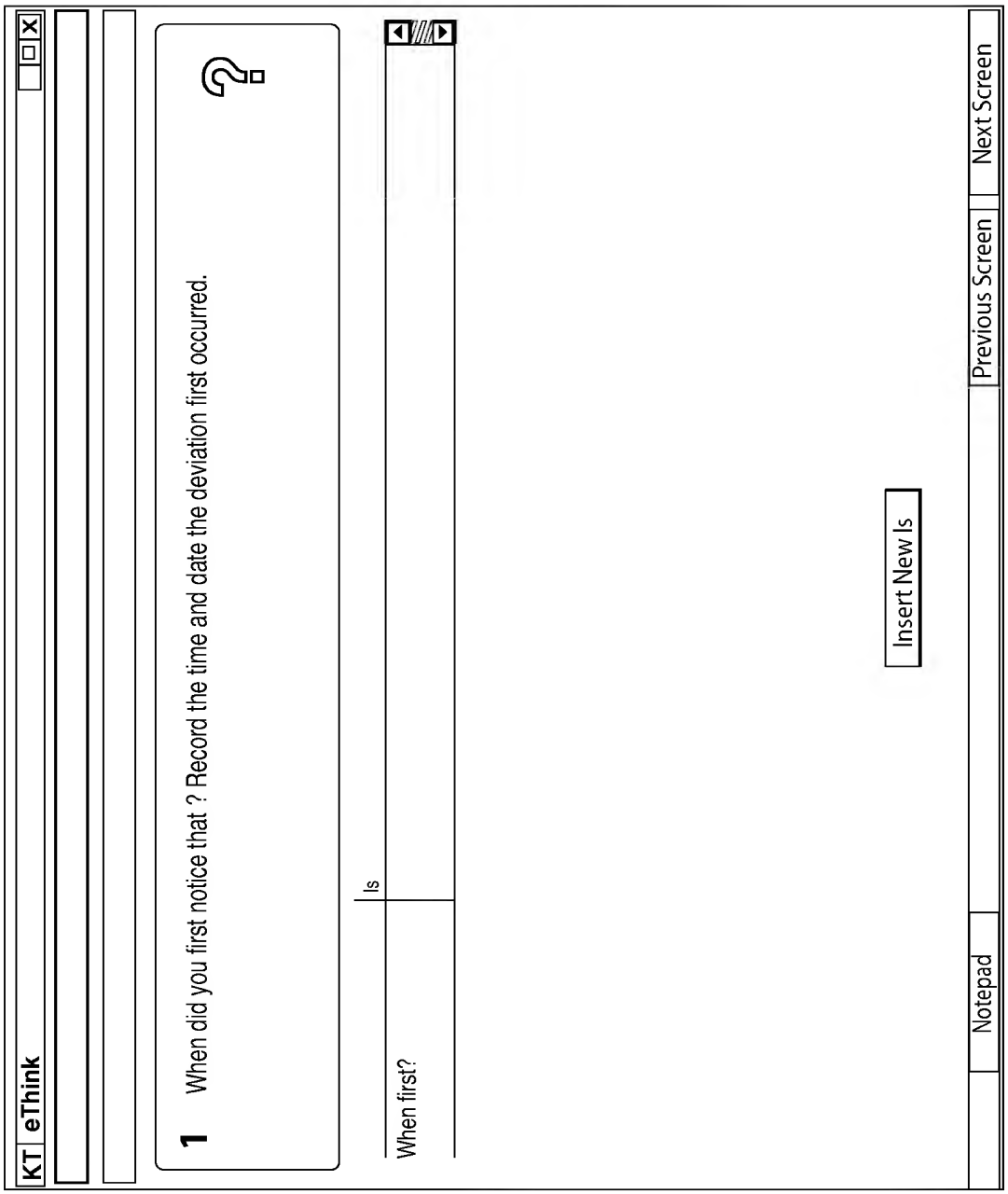
KT eThink
1 When did you first notice that ? Record the time and date the deviation first occurred.
Is
When first?
Insert New Is
Notepad
Previous Screen
Next Screen

Fig. 105

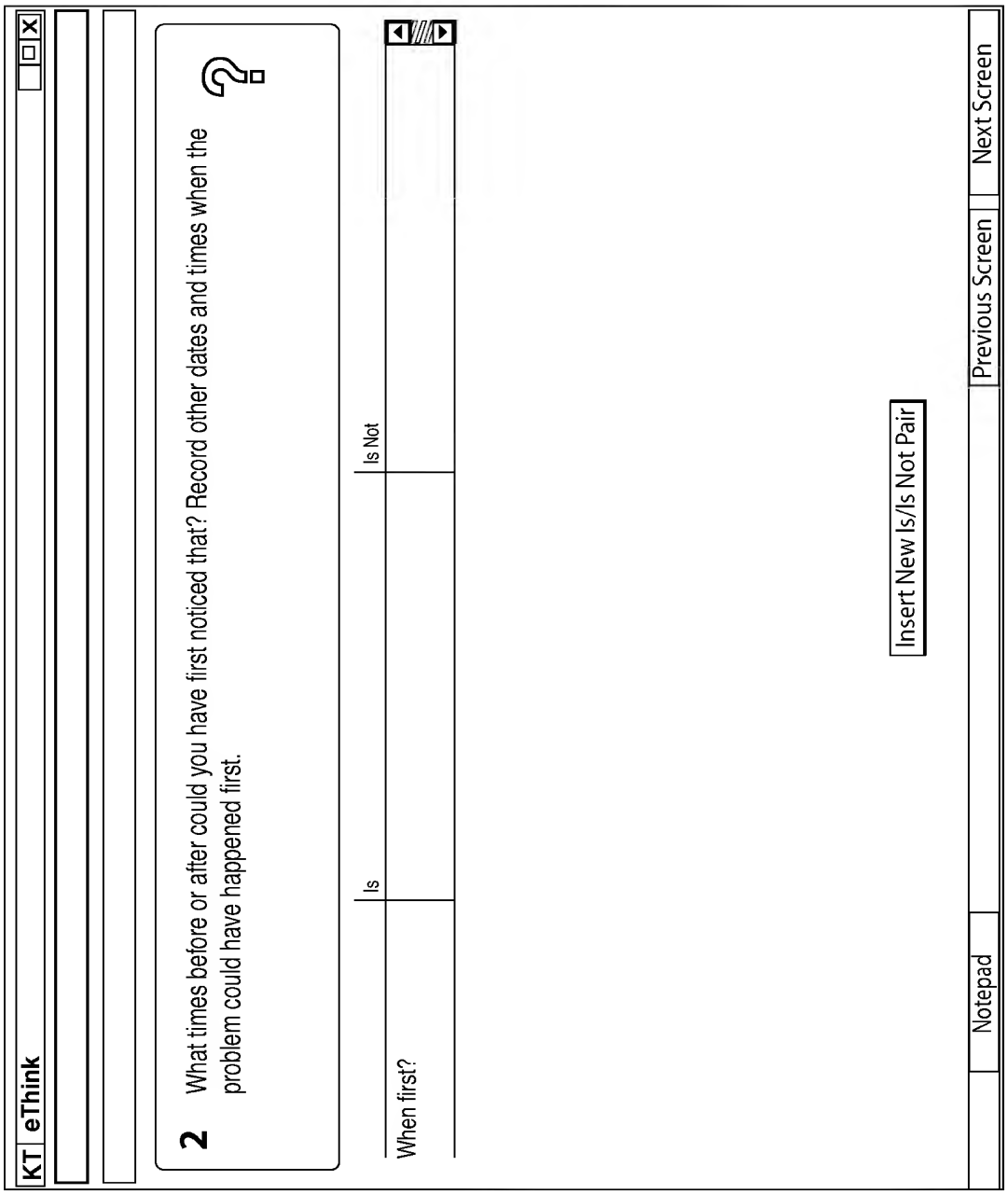
KT eThink
2
What times before or after could you have first noticed that? Record other dates and times when the problem could have happened first.
Is
Is Not
When first?
Insert New Is/Is Not Pair
Notepad
Previous Screen
Next Screen

Fig. 106

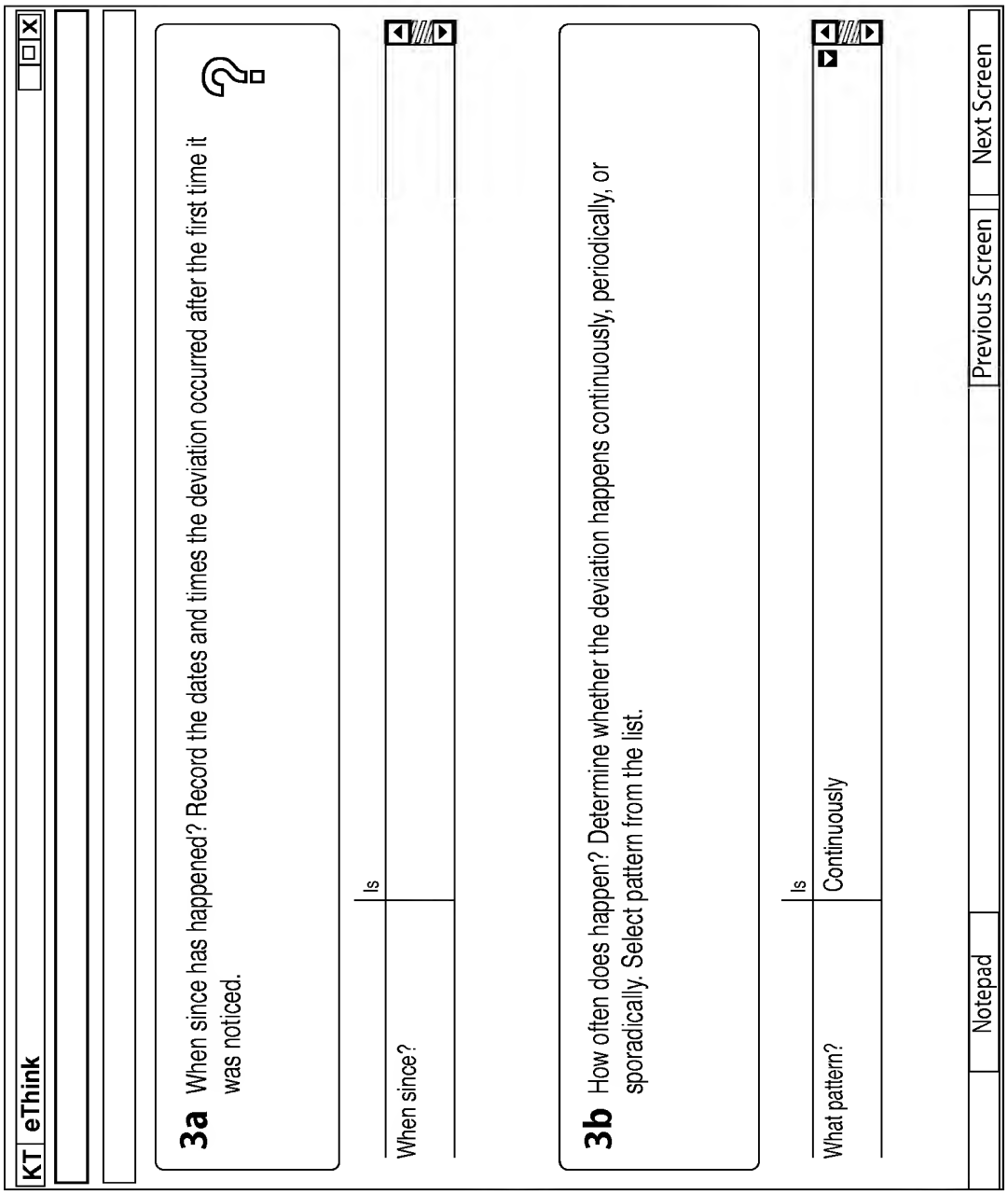
KT eThink
3a When since has happened? Record the dates and times the deviation occurred after the first time it was noticed.
Is
When since?
3b How often does happen? Determine whether the deviation happens continuously, periodically, or sporadically. Select pattern from the list.
Is
What pattern?
Continuously
Notepad
Previous Screen
Next Screen

Fig. 107

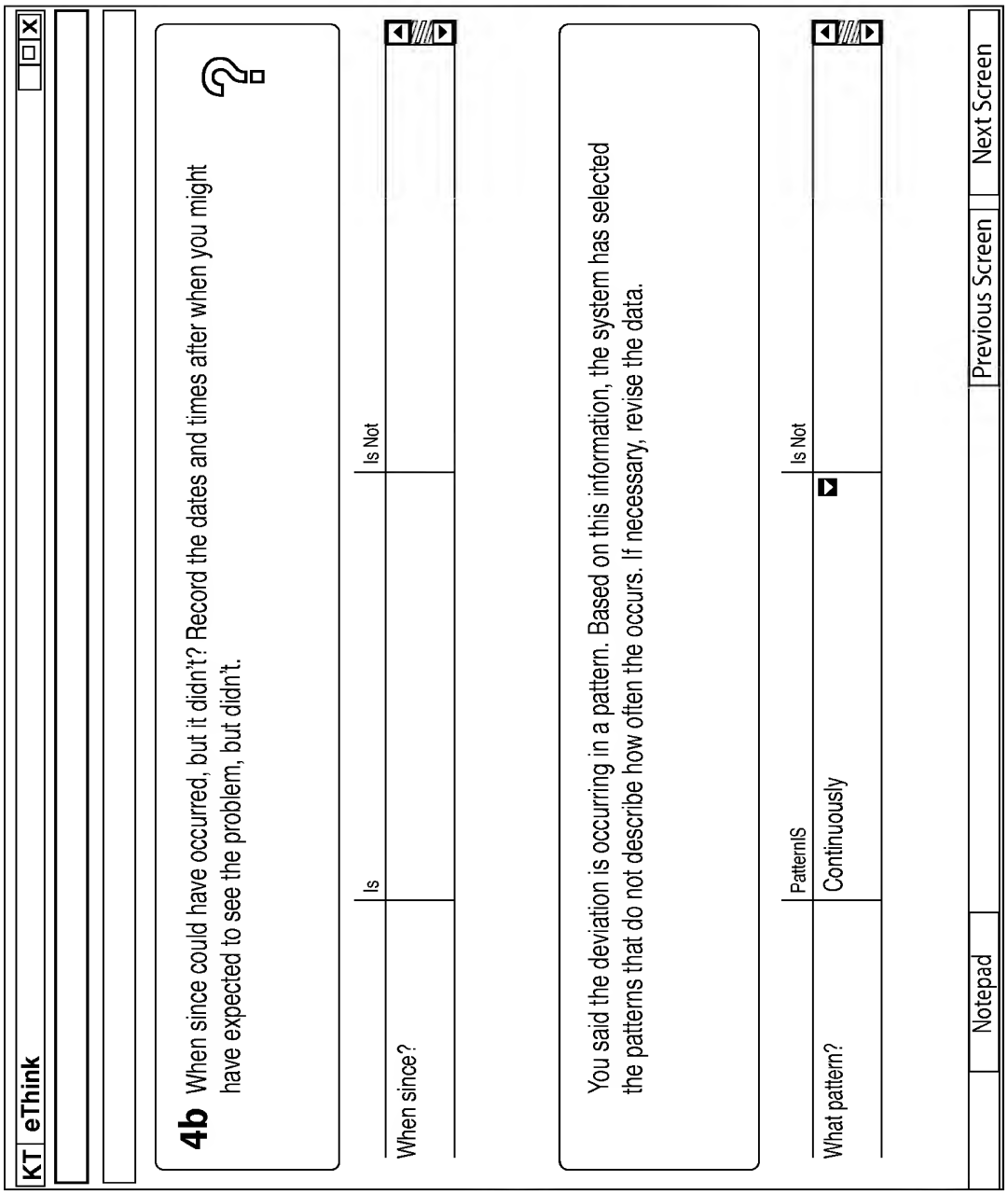
KT eThink
4b When since could have occurred, but it didn't? Record the dates and times after when you might have expected to see the problem, but didn't.
Is
Is Not
When since?
You said the deviation is occurring in a pattern. Based on this information, the system has selected the patterns that do not describe how often the occurs. If necessary, revise the data.
PatternIS
Is Not
What pattern?
Continuously
Notepad
Previous Screen
Next Screen

Fig. 108

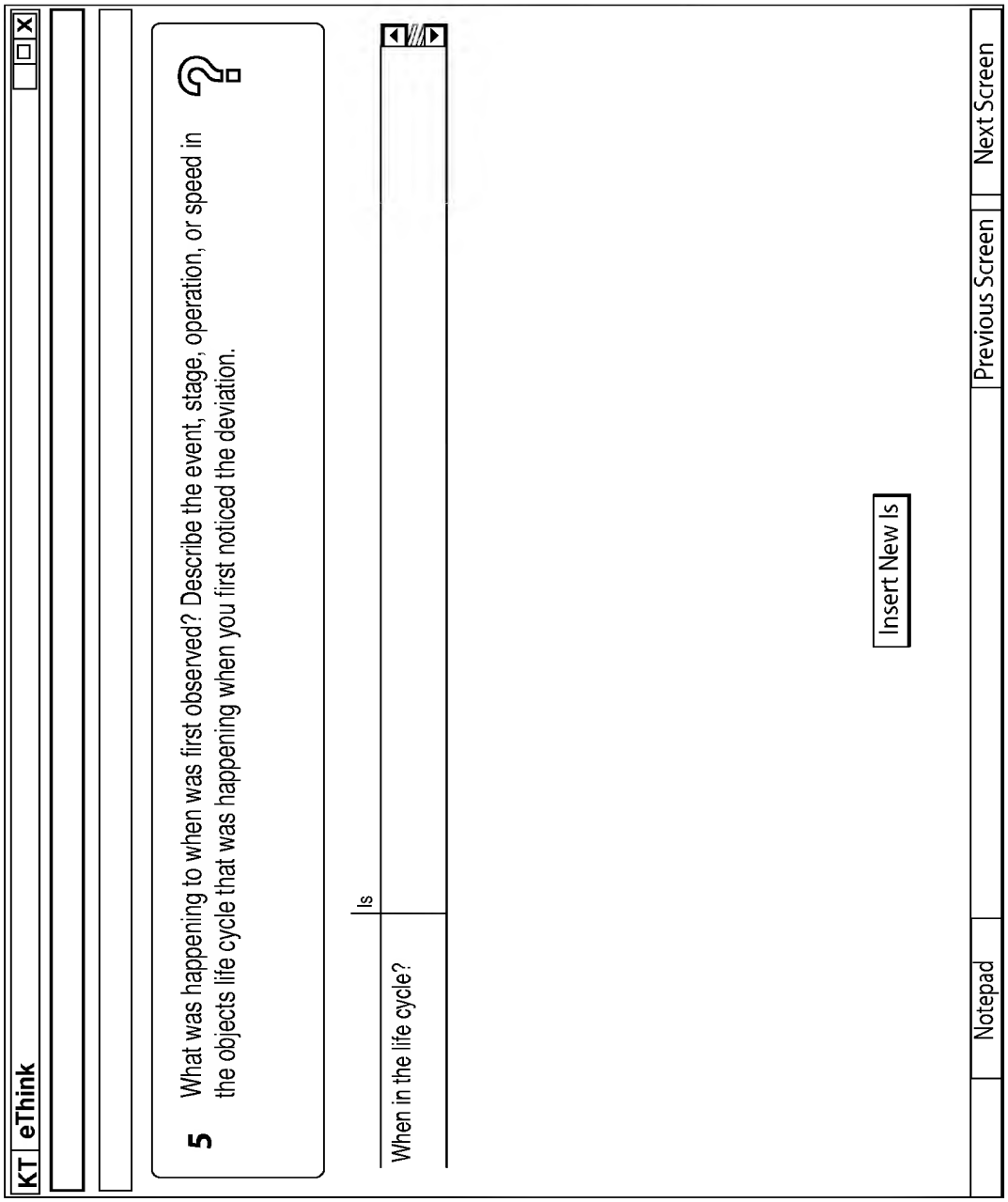
KT eThink
5
What was happening to when was first observed? Describe the event, stage, operation, or speed in the objects life cycle that was happening when you first noticed the deviation.
Is
When in the life cycle?
Insert New Is
Notepad
Previous Screen
Next Screen

Fig. 109

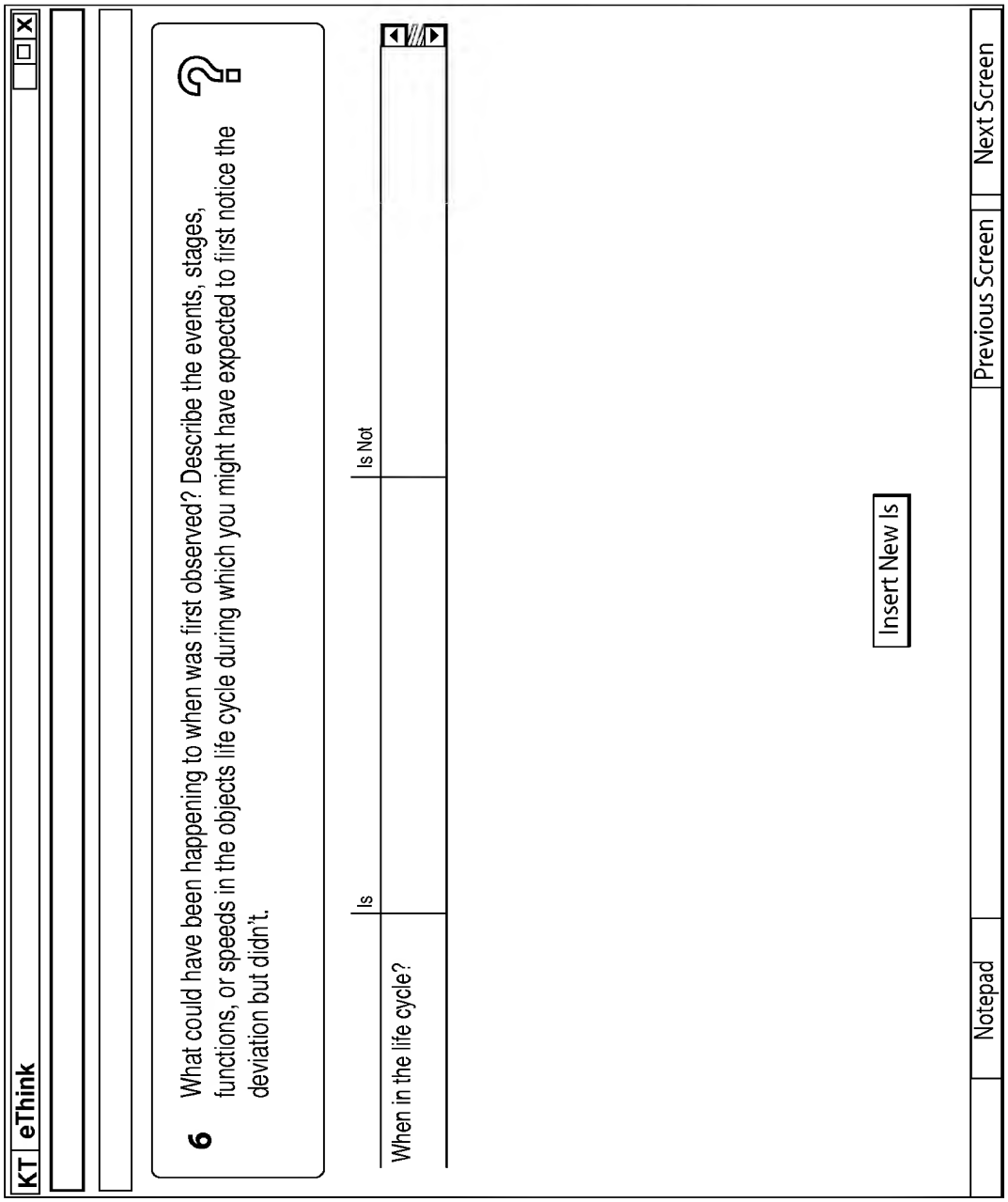
KT eThink
6
What could have been happening to when was first observed? Describe the events, stages, functions, or speeds in the objects life cycle during which you might have expected to first notice the deviation but didn't.
Is
Is Not
When in the life cycle?
Insert New Is
Notepad
Previous Screen
Next Screen

Fig. 110

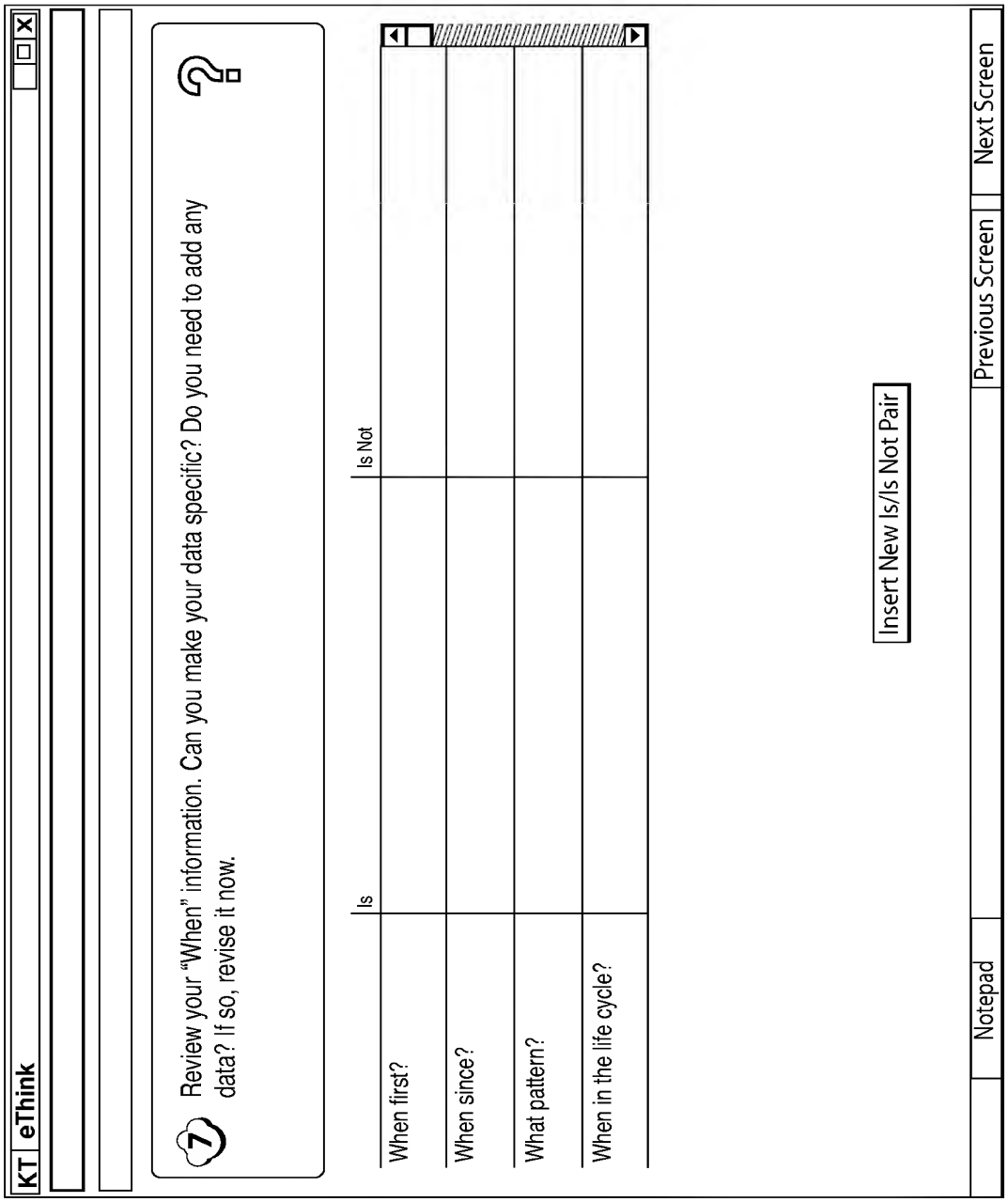
KT eThink
7
Review your "When" information. Can you make your data specific? Do you need to add any data? If so, revise it now.
Is
Is Not
When first?
When since?
What pattern?
When in the life cycle?
Insert New Is/Is Not Pair
Notepad
Previous Screen
Next Screen

Fig. 111

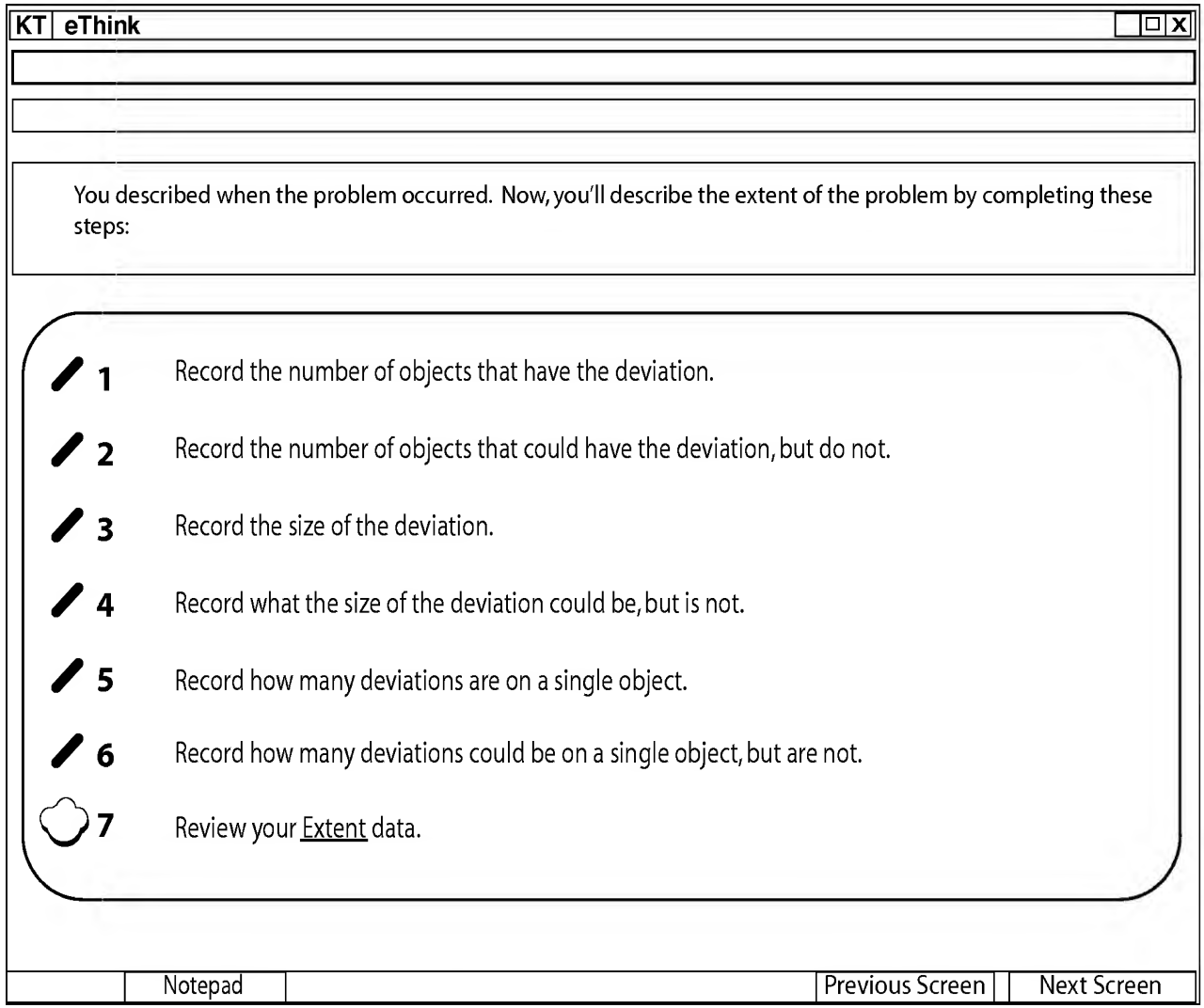
KT eThink
You described when the problem occurred. Now, you'll describe the extent of the problem by completing these steps:
1 Record the number of objects that have the deviation.
2 Record the number of objects that could have the deviation, but do not.
3 Record the size of the deviation.
4 Record what the size of the deviation could be, but is not.
5 Record how many deviations are on a single object.
6 Record how many deviations could be on a single object, but are not.
7 Review your Extent data.
Notepad
Previous Screen
Next Screen

Fig. 112

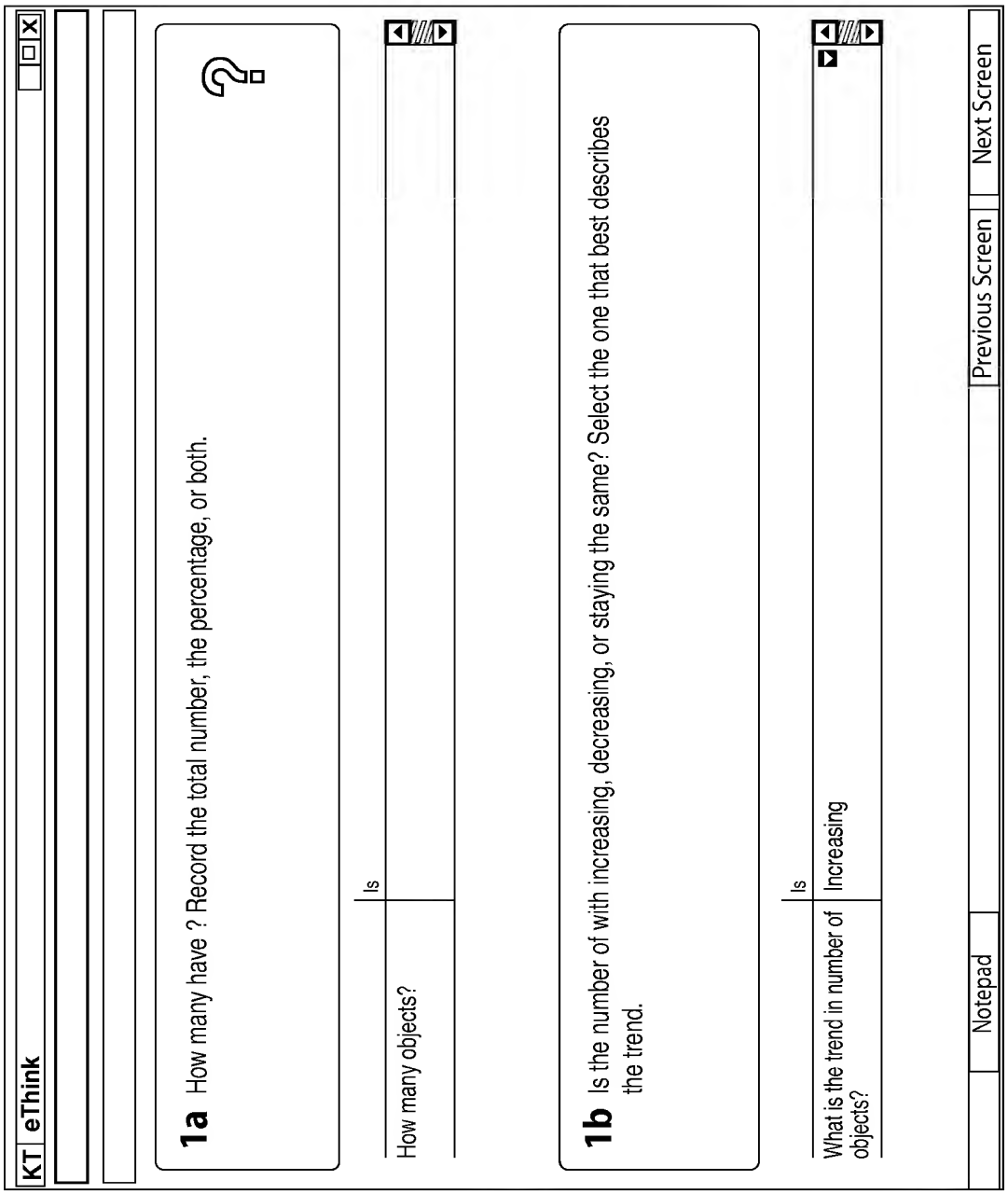
KT eThink
1a How many have ? Record the total number, the percentage, or both.
How many objects?
Is
1b Is the number of with increasing, decreasing, or staying the same? Select the one that best describes the trend.
What is the trend in number of objects?
Is
Increasing
Notepad
Previous Screen
Next Screen

Fig. 113

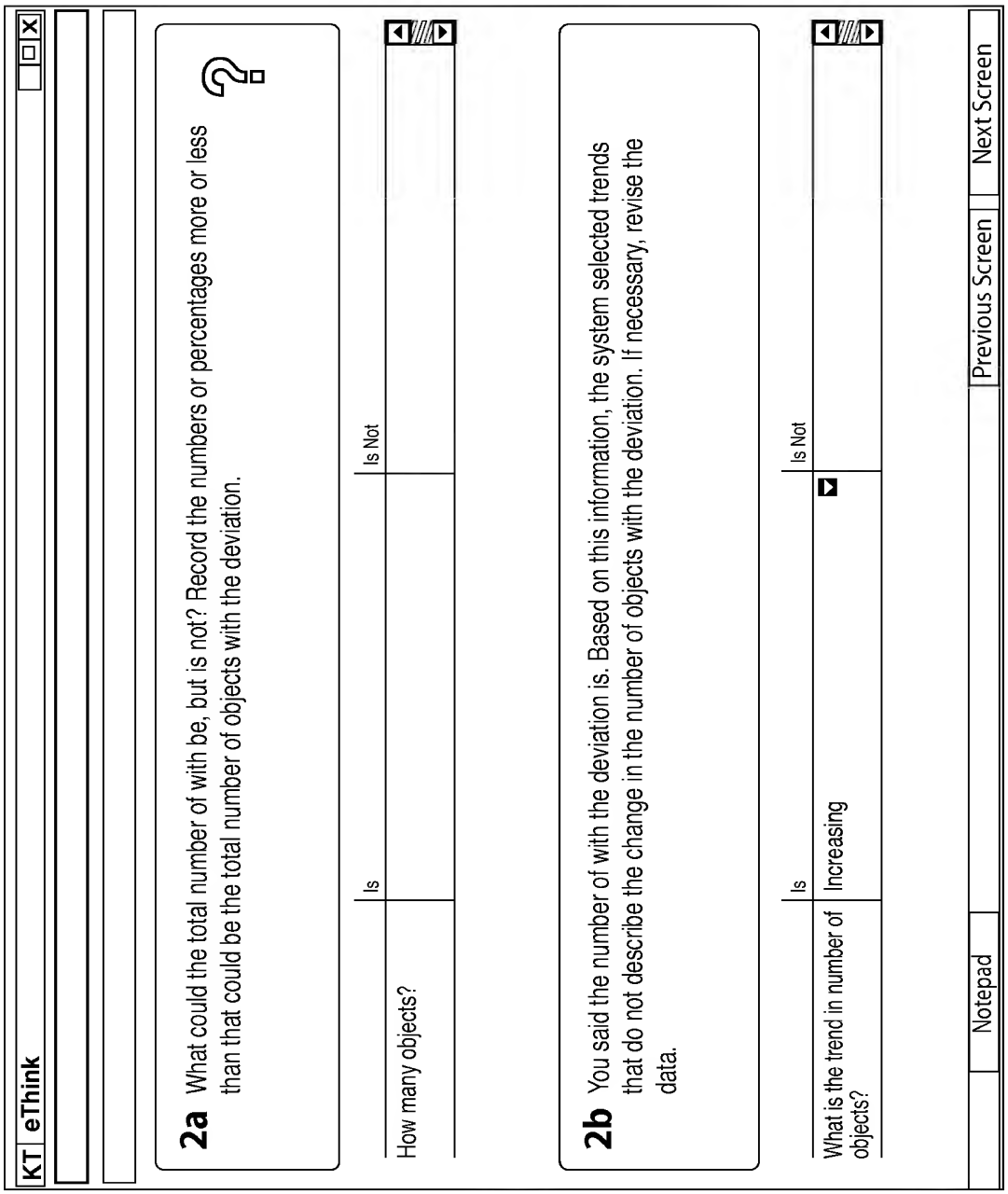
KT eThink
2a What could the total number of with be, but is not? Record the numbers or percentages more or less than that could be the total number of objects with the deviation.
Is
Is Not
How many objects?
2b You said the number of with the deviation is. Based on this information, the system selected trends that do not describe the change in the number of objects with the deviation. If necessary, revise the data.
Is
Is Not
What is the trend in number of objects?
Increasing
Notepad
Previous Screen
Next Screen

Fig. 114

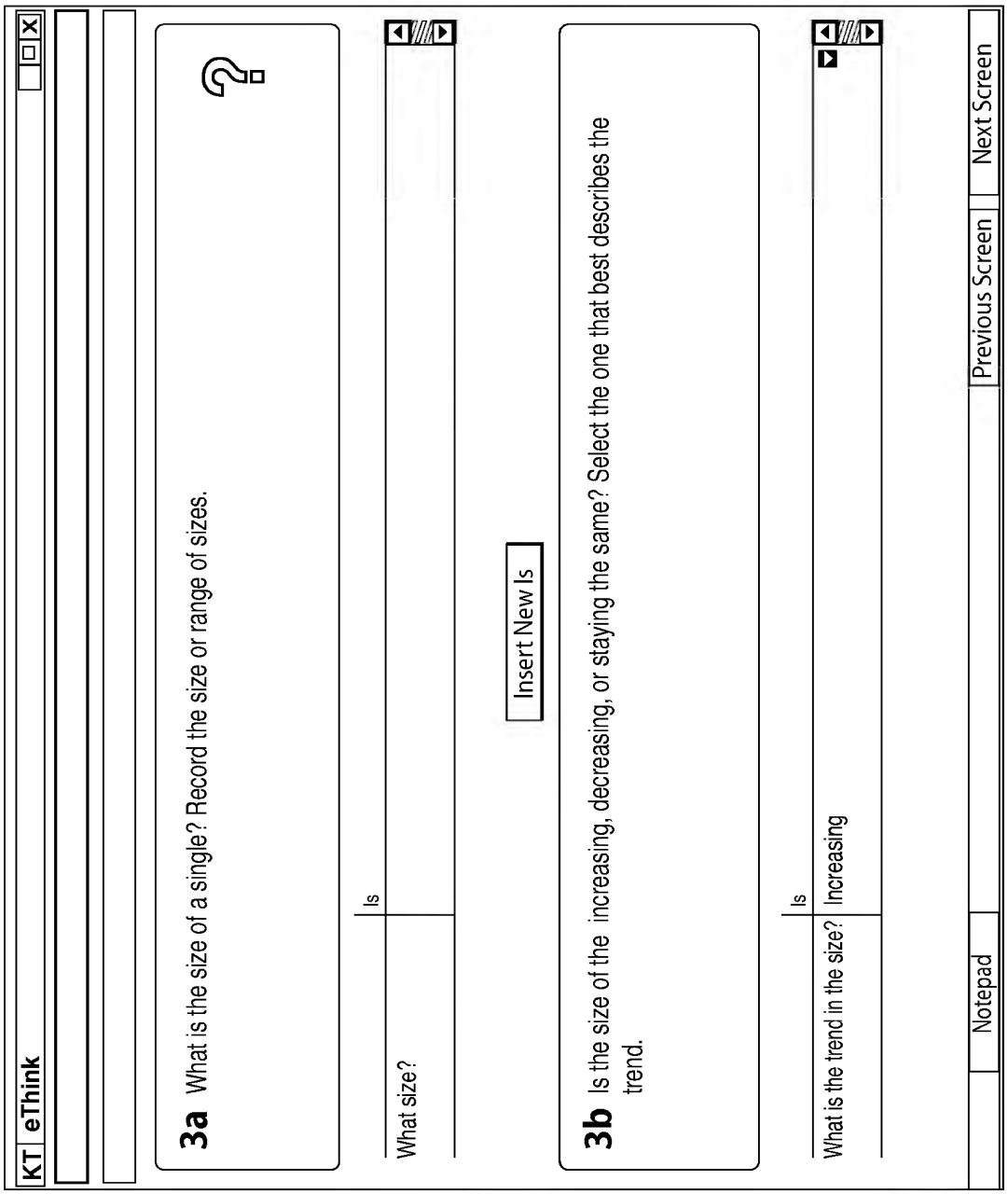
KT eThink
3a What is the size of a single? Record the size or range of sizes.
Is
What size?
Insert New Is
3b Is the size of the increasing, decreasing, or staying the same? Select the one that best describes the trend.
Is
What is the trend in the size?
Increasing
Notepad
Previous Screen
Next Screen

Fig. 115

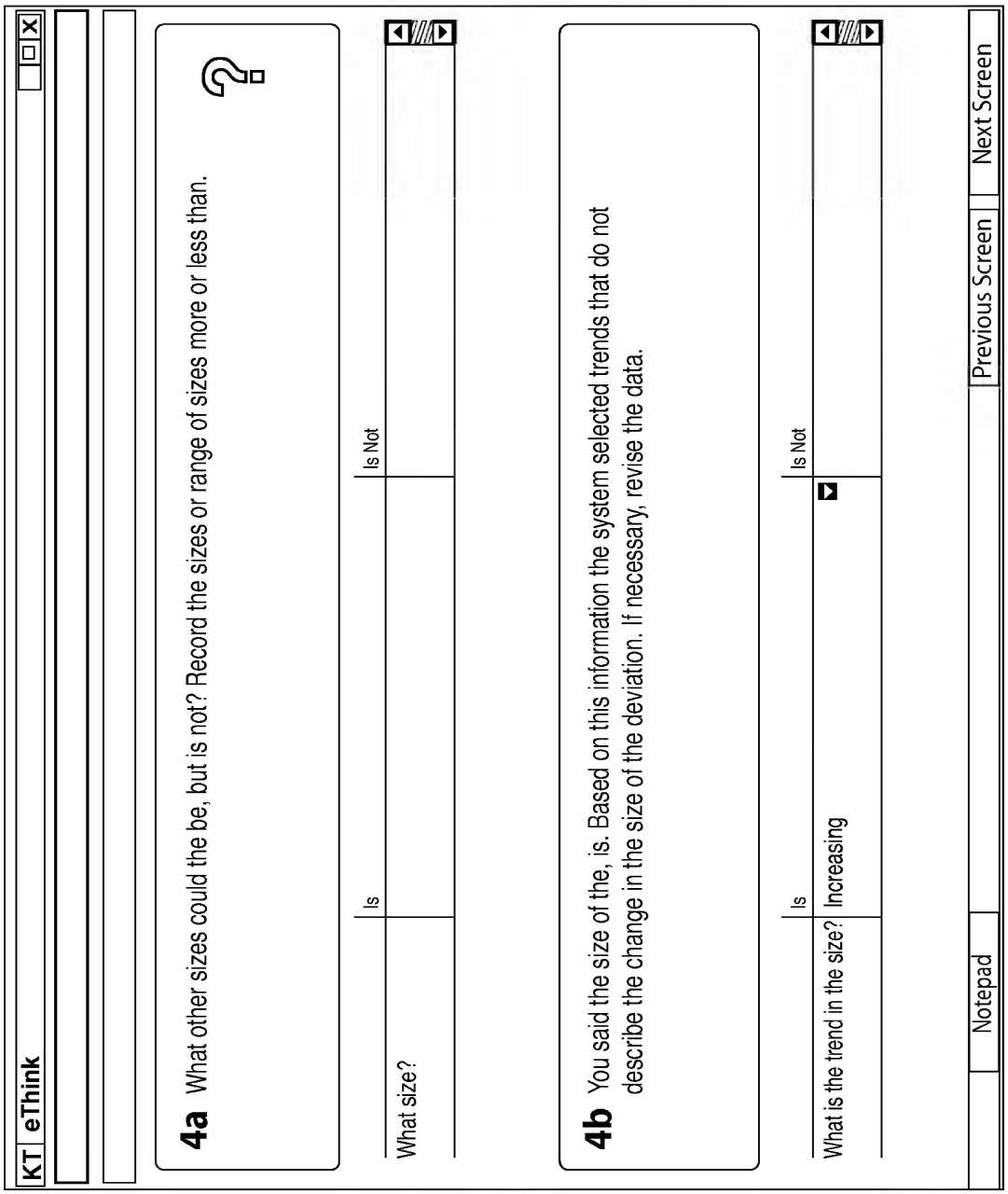
KT eThink
4a What other sizes could the be, but is not? Record the sizes or range of sizes more or less than.
What size?
Is
Is Not
4b You said the size of the, is. Based on this information the system selected trends that do not describe the change in the size of the deviation. If necessary, revise the data.
What is the trend in the size?
Is
Increasing
Is Not
Notepad
Previous Screen
Next Screen

Fig. 116

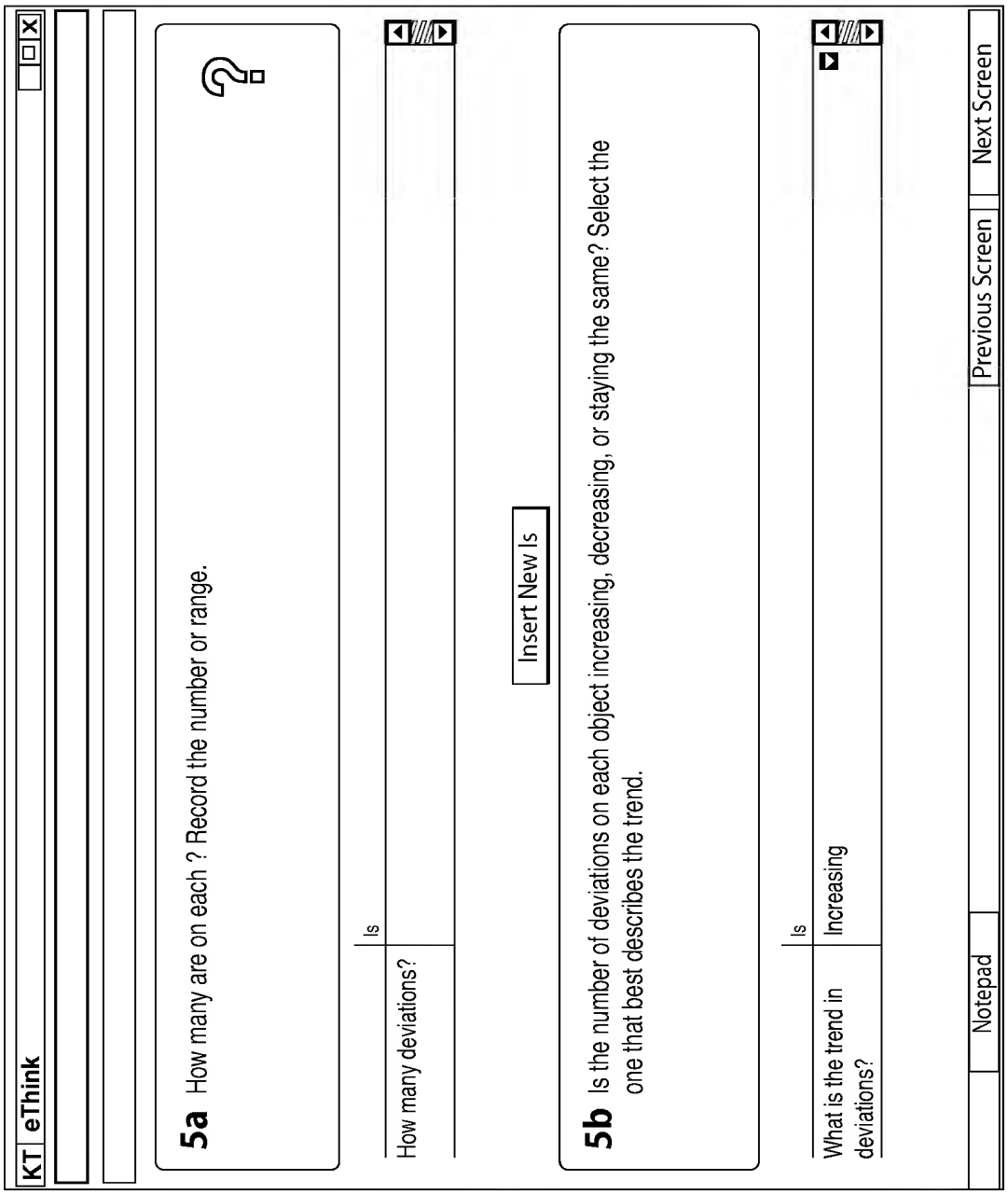
KT eThink
5a How many are on each ? Record the number or range.
How many deviations?
Is
Insert New Is
5b Is the number of deviations on each object increasing, decreasing, or staying the same? Select the one that best describes the trend.
What is the trend in deviations?
Is
Increasing
Notepad
Previous Screen
Next Screen

Fig. 117

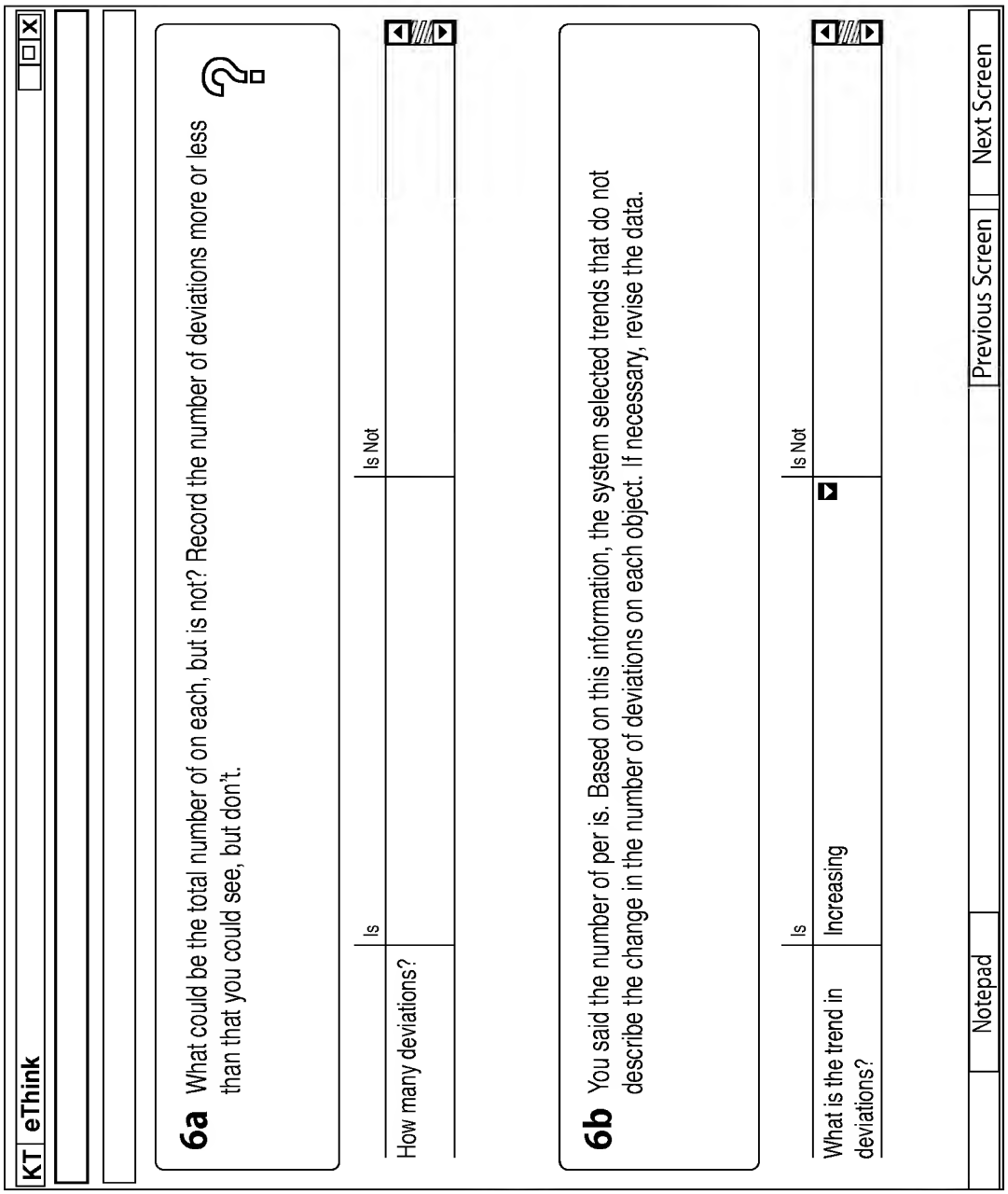
KT eThink
6a What could be the total number of on each, but is not? Record the number of deviations more or less than that you could see, but don't.
Is
Is Not
How many deviations?
6b You said the number of per is. Based on this information, the system selected trends that do not describe the change in the number of deviations on each object. If necessary, revise the data.
Is
Is Not
What is the trend in deviations?
Increasing
Notepad
Previous Screen
Next Screen

Fig. 118

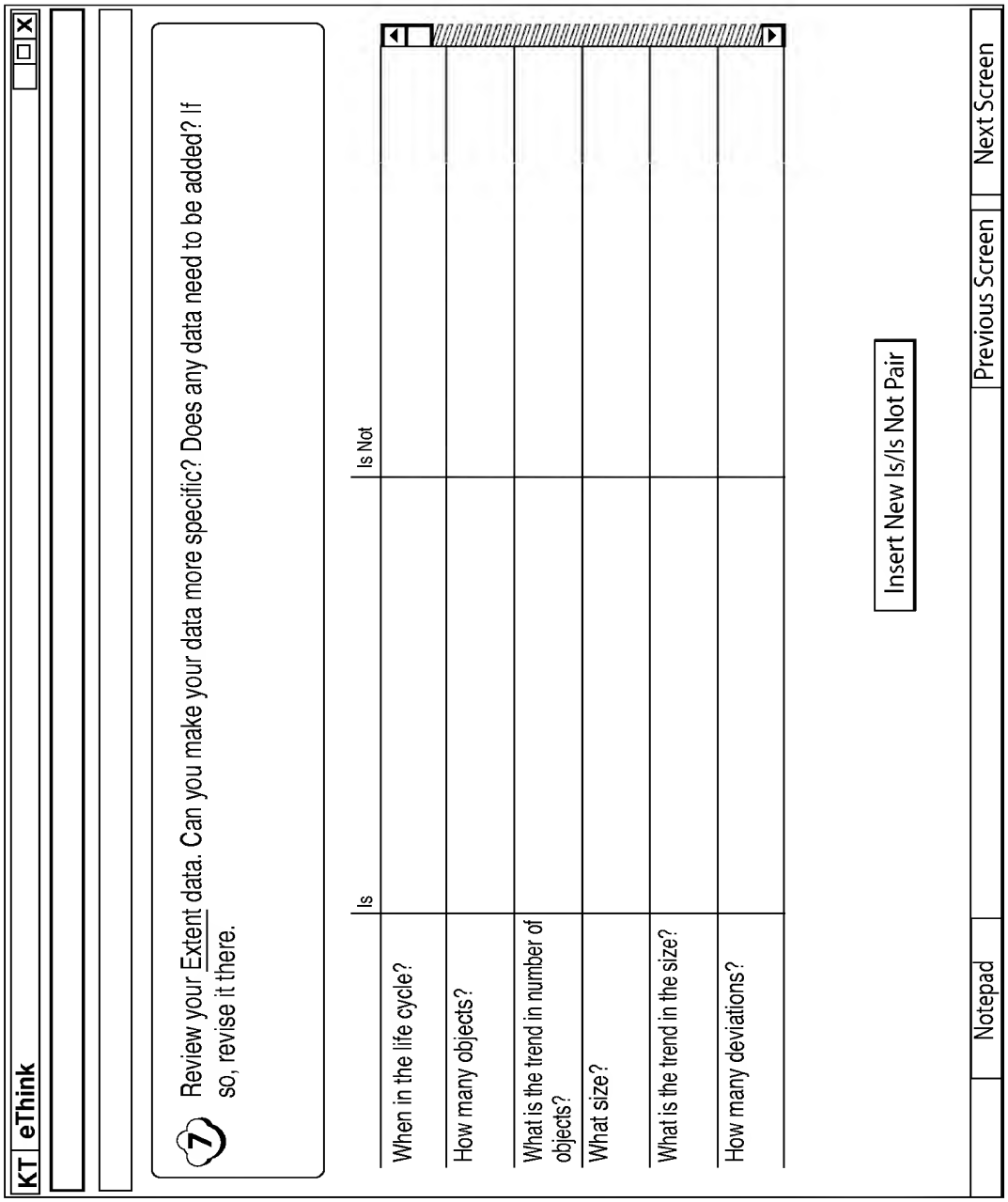
KT eThink
Review your Extent data. Can you make your data more specific? Does any data need to be added? If so, revise it there.
Is
Is Not
When in the life cycle?
How many objects?
What is the trend in number of objects?
What size?
What is the trend in the size?
How many deviations?
Insert New Is/Is Not Pair
Notepad
Previous Screen
Next Screen

Fig. 119

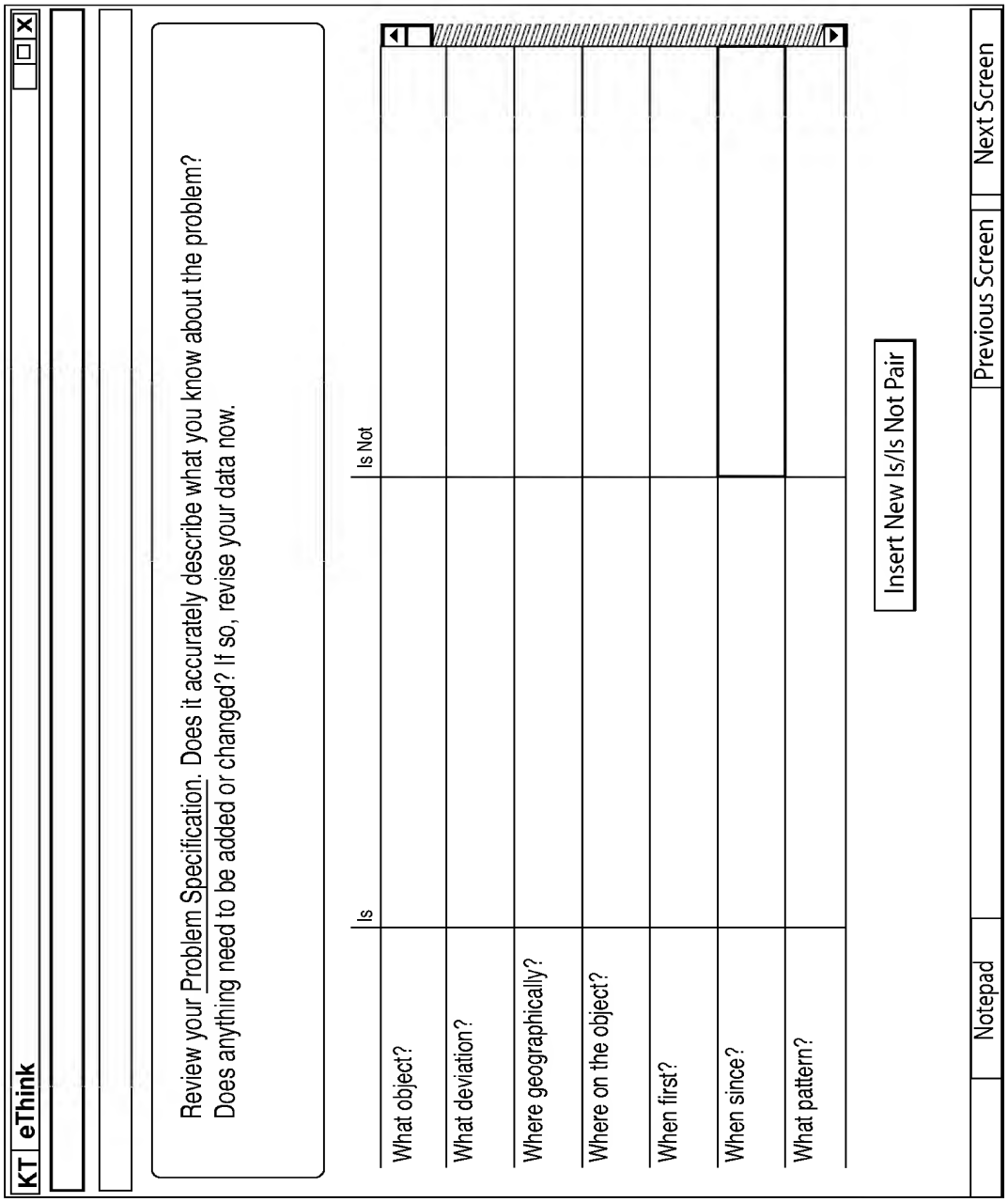
KT eThink
Review your Problem Specification. Does it accurately describe what you know about the problem?
Does anything need to be added or changed? If so, revise your data now.
Is
Is Not
What object?
What deviation?
Where geographically?
Where on the object?
When first?
When since?
What pattern?
Insert New Is/Is Not Pair
Notepad
Previous Screen
Next Screen

Fig. 120

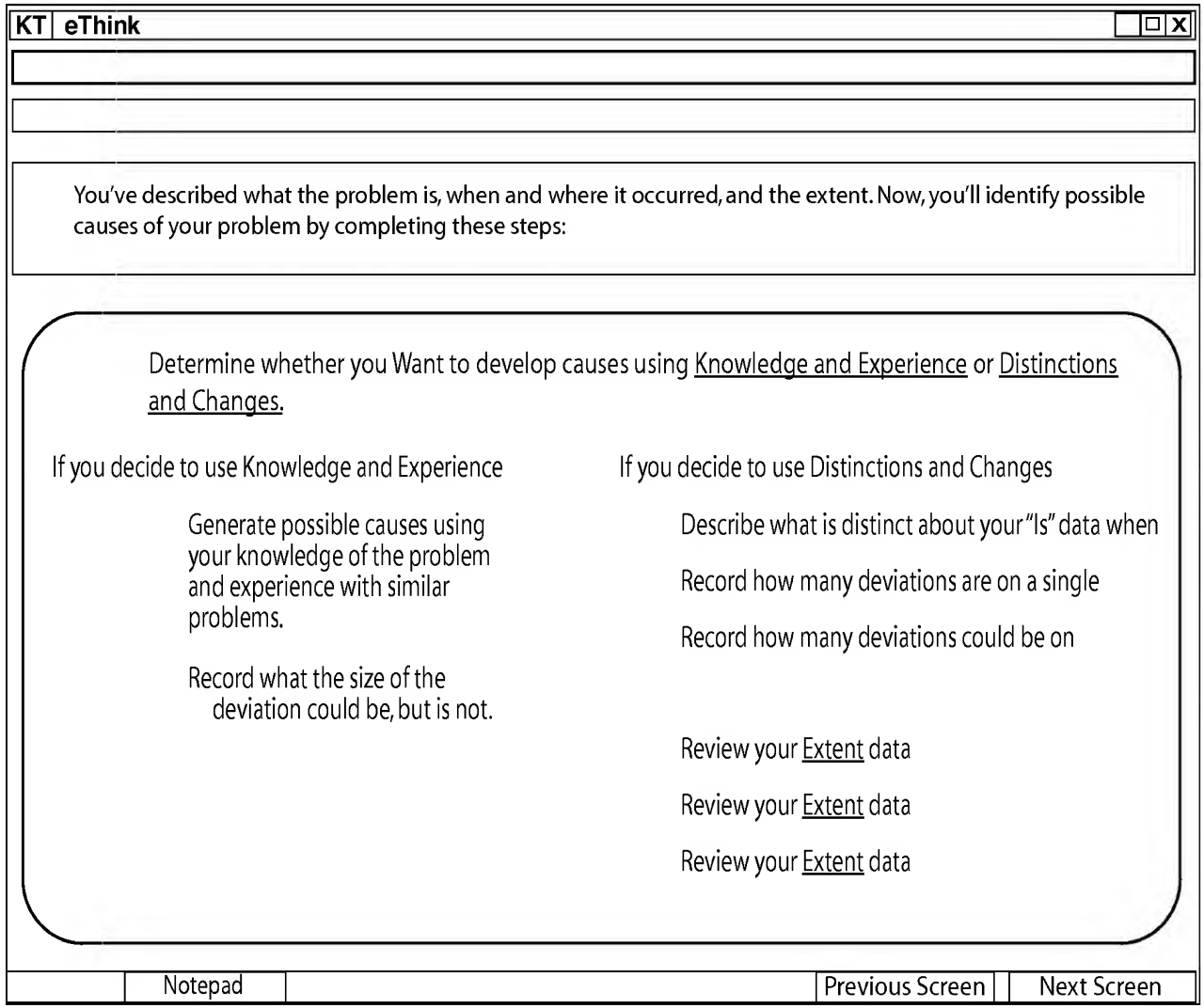
KT eThink
You've described what the problem is, when and where it occurred, and the extent. Now, you'll identify possible causes of your problem by completing these steps:
Determine whether you Want to develop causes using Knowledge and Experience or Distinctions and Changes.
If you decide to use Knowledge and Experience
Generate possible causes using your knowledge of the problem and experience with similar problems.
Record what the size of the deviation could be, but is not.
If you decide to use Distinctions and Changes
Describe what is distinct about your "Is" data when
Record how many deviations are on a single
Record how many deviations could be on
Review your Extent data
Review your Extent data
Review your Extent data
Notepad
Previous Screen
Next Screen

Fig. 121

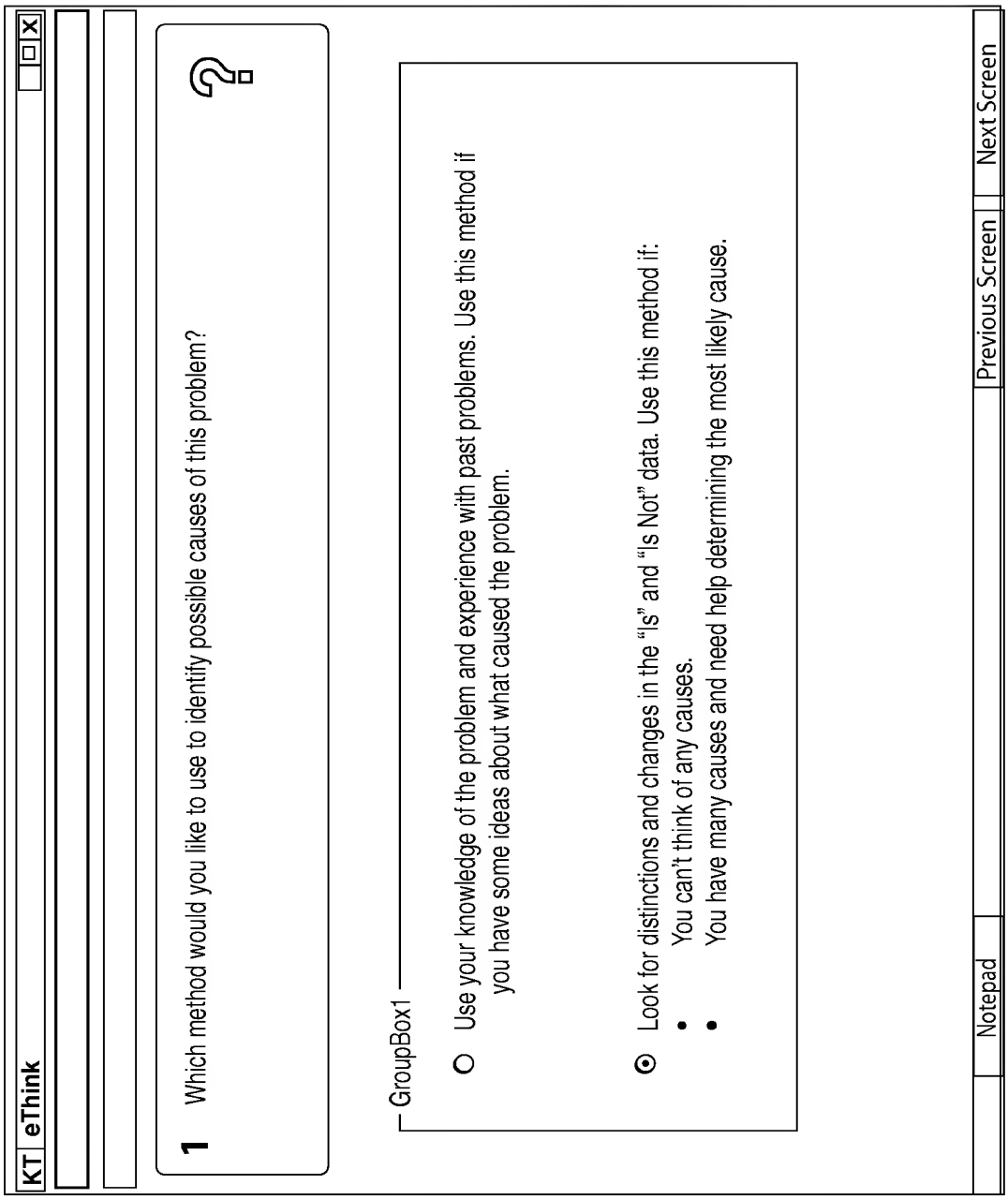
KT eThink
1 Which method would you like to use to identify possible causes of this problem?
GroupBox1
Use your knowledge of the problem and experience with past problems. Use this method if you have some ideas about what caused the problem.
Look for distinctions and changes in the "Is" and "Is Not" data. Use this method if:
You can't think of any causes.
You have many causes and need help determining the most likely cause.
Notepad
Previous Screen
Next Screen

Fig. 122

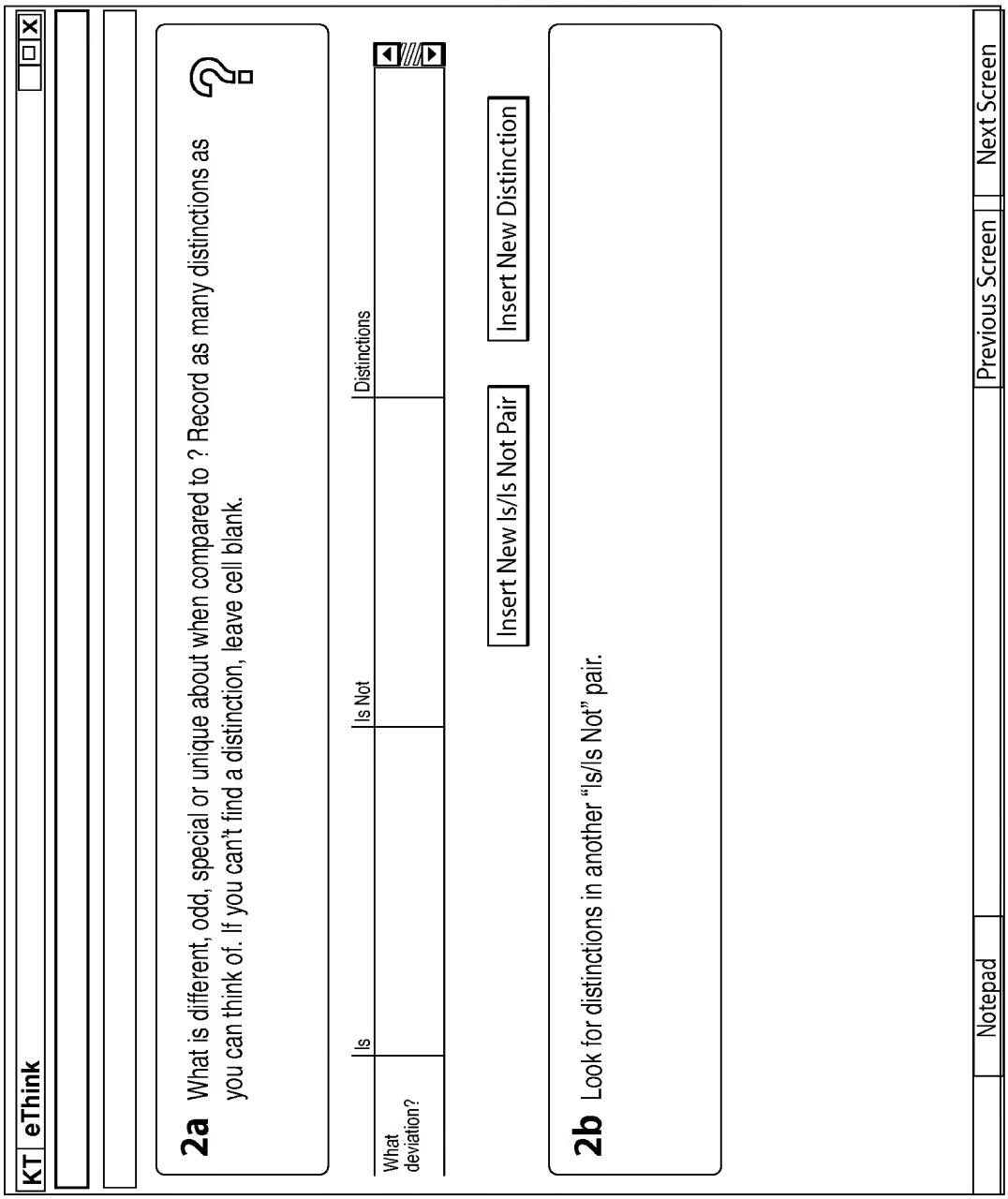
KT eThink
2a What is different, odd, special or unique about when compared to ? Record as many distinctions as you can think of. If you can't find a distinction, leave cell blank.
What deviation?
Is
Is Not
Distinctions
Insert New Is/Is Not Pair
Insert New Distinction
2b Look for distinctions in another "Is/Is Not" pair.
Notepad
Previous Screen
Next Screen

Fig. 123

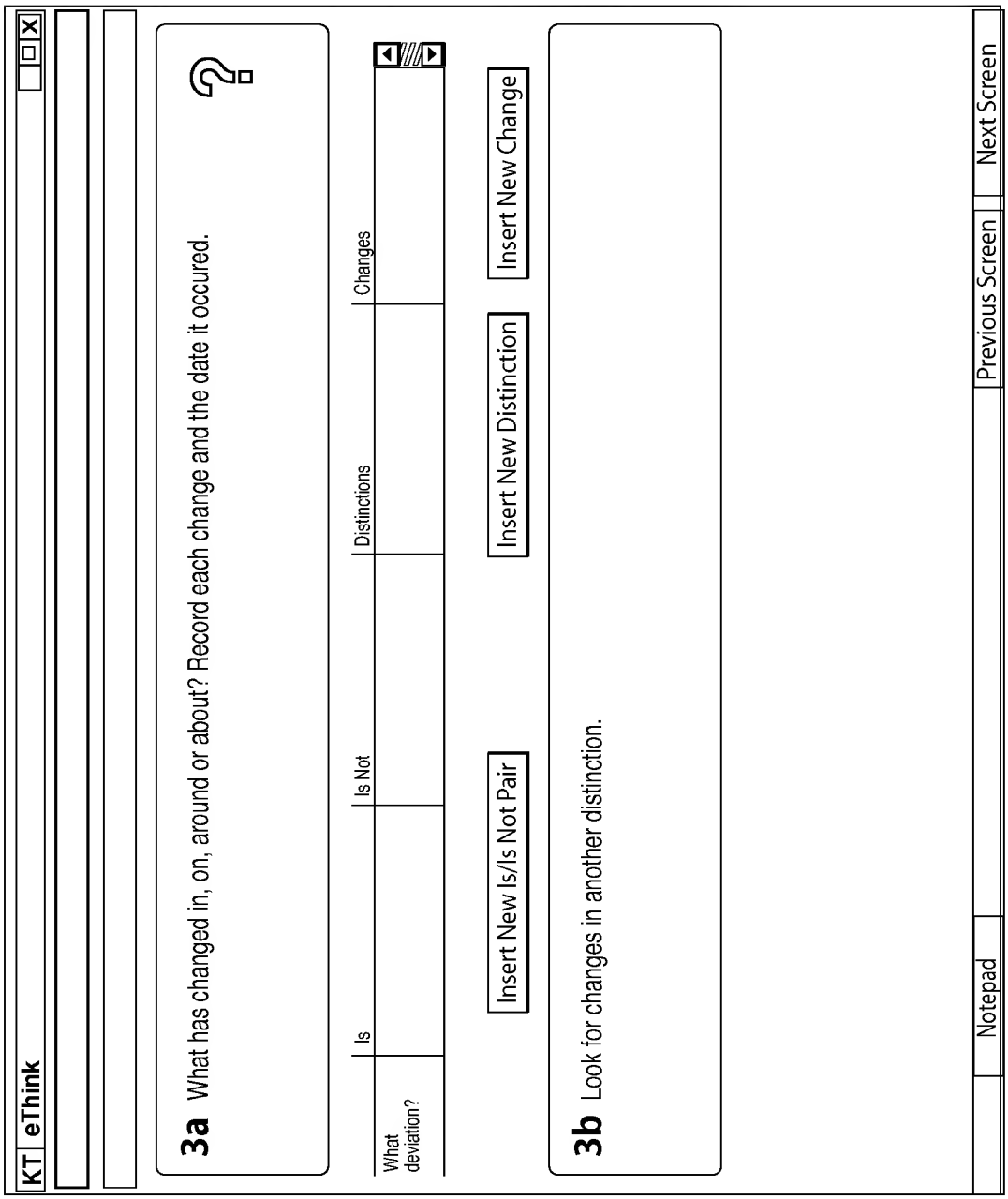
KT eThink
3a What has changed in, on, around or about? Record each change and the date it occured.
What deviation?
Is
Is Not
Distinctions
Changes
Insert New Is/Is Not Pair
Insert New Distinction
Insert New Change
3b Look for changes in another distinction.
Notepad
Previous Screen
Next Screen

Fig. 124

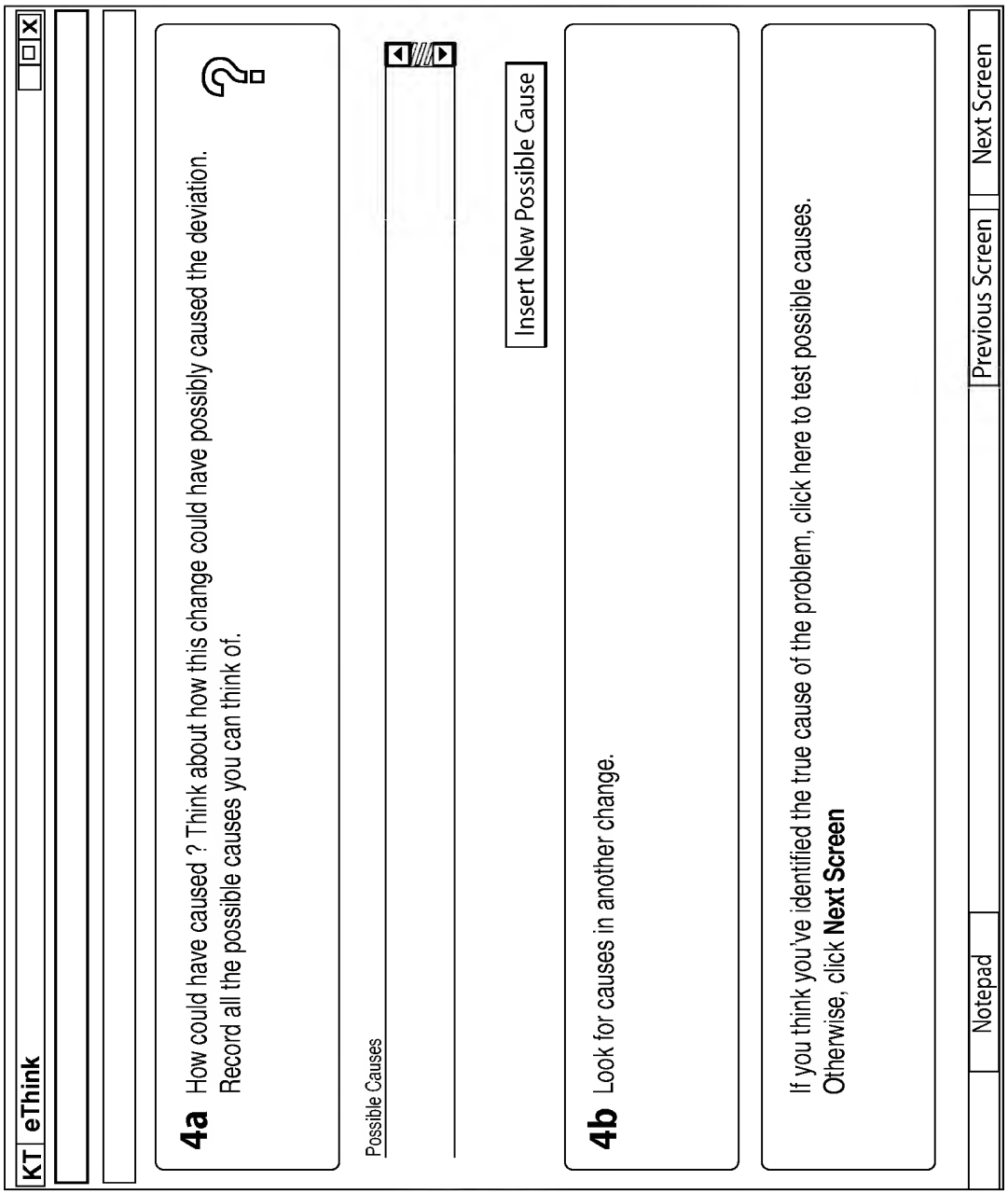
KT eThink
4a How could have caused ? Think about how this change could have possibly caused the deviation.
Record all the possible causes you can think of.
Possible Causes
Insert New Possible Cause
4b Look for causes in another change.
If you think you've identified the true cause of the problem, click here to test possible causes.
Otherwise, click Next Screen
Notepad
Previous Screen
Next Screen

Fig. 125

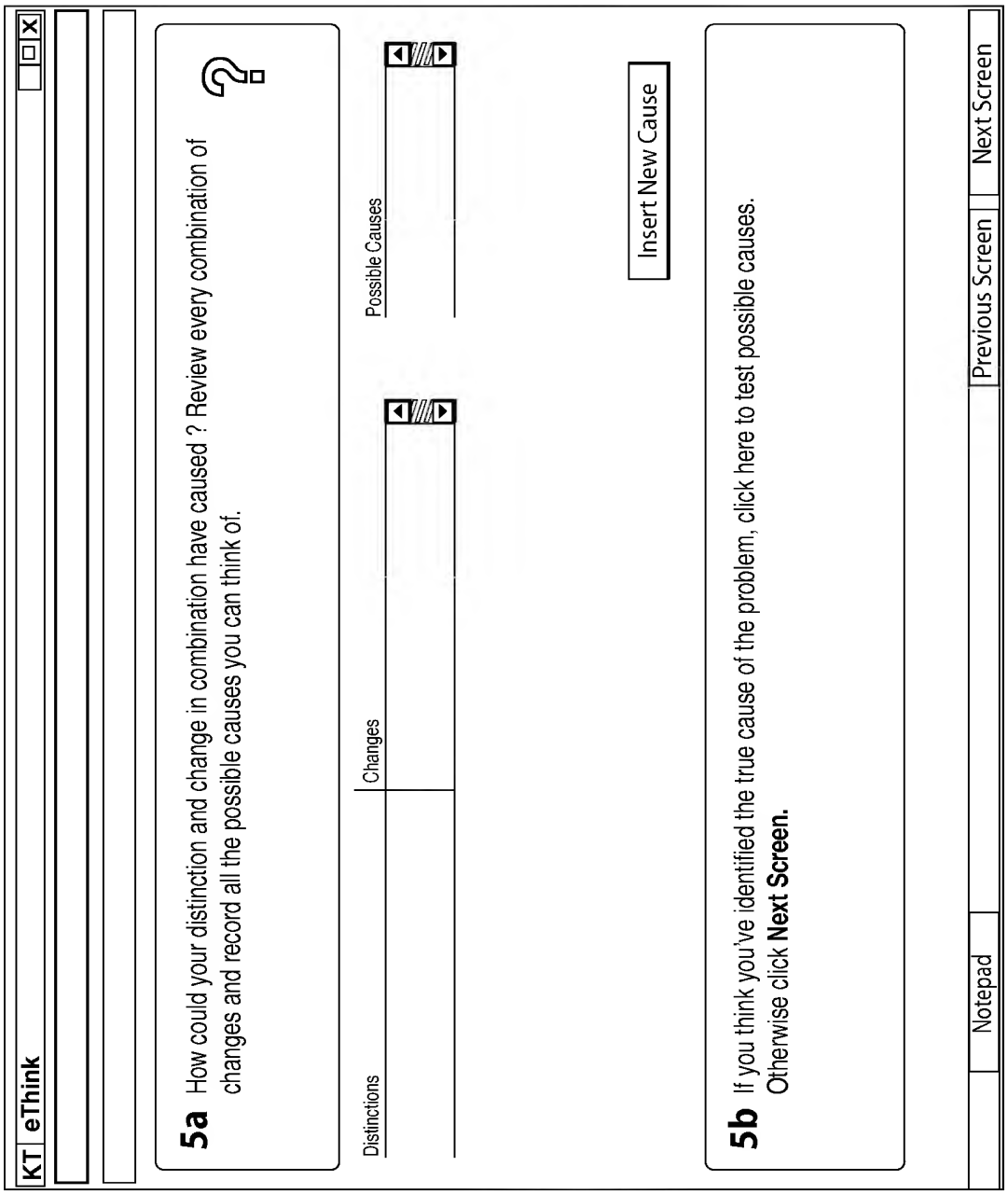
KT eThink
5a How could your distinction and change in combination have caused ? Review every combination of changes and record all the possible causes you can think of.
Distinctions
Changes
Possible Causes
Insert New Cause
5b If you think you've identified the true cause of the problem, click here to test possible causes. Otherwise click Next Screen.
Notepad
Previous Screen
Next Screen

Fig. 126

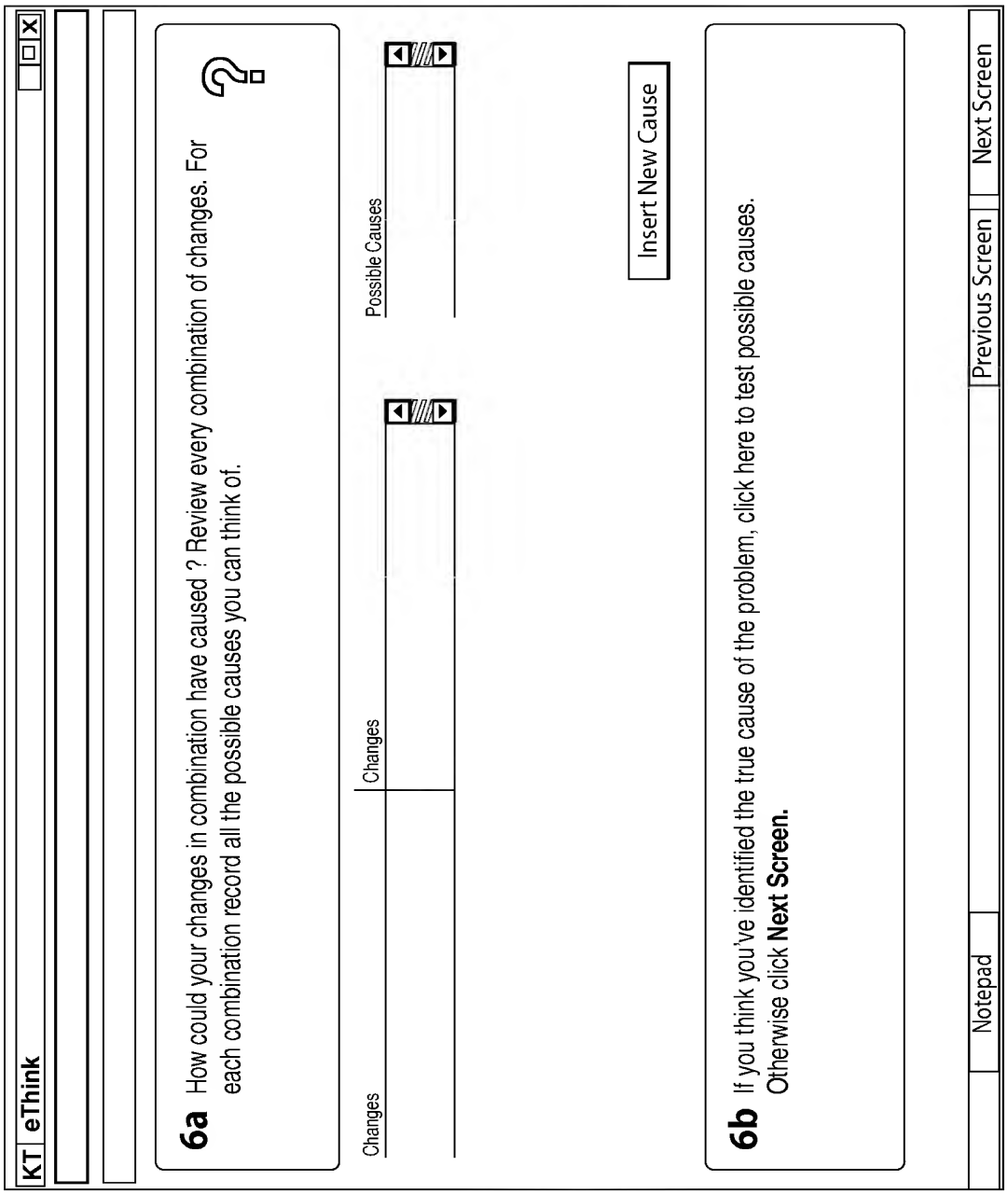
KT eThink
6a How could your changes in combination have caused ? Review every combination of changes. For each combination record all the possible causes you can think of.
Changes
Changes
Possible Causes
Insert New Cause
6b If you think you've identified the true cause of the problem, click here to test possible causes. Otherwise click Next Screen.
Notepad
Previous Screen
Next Screen

Fig. 127

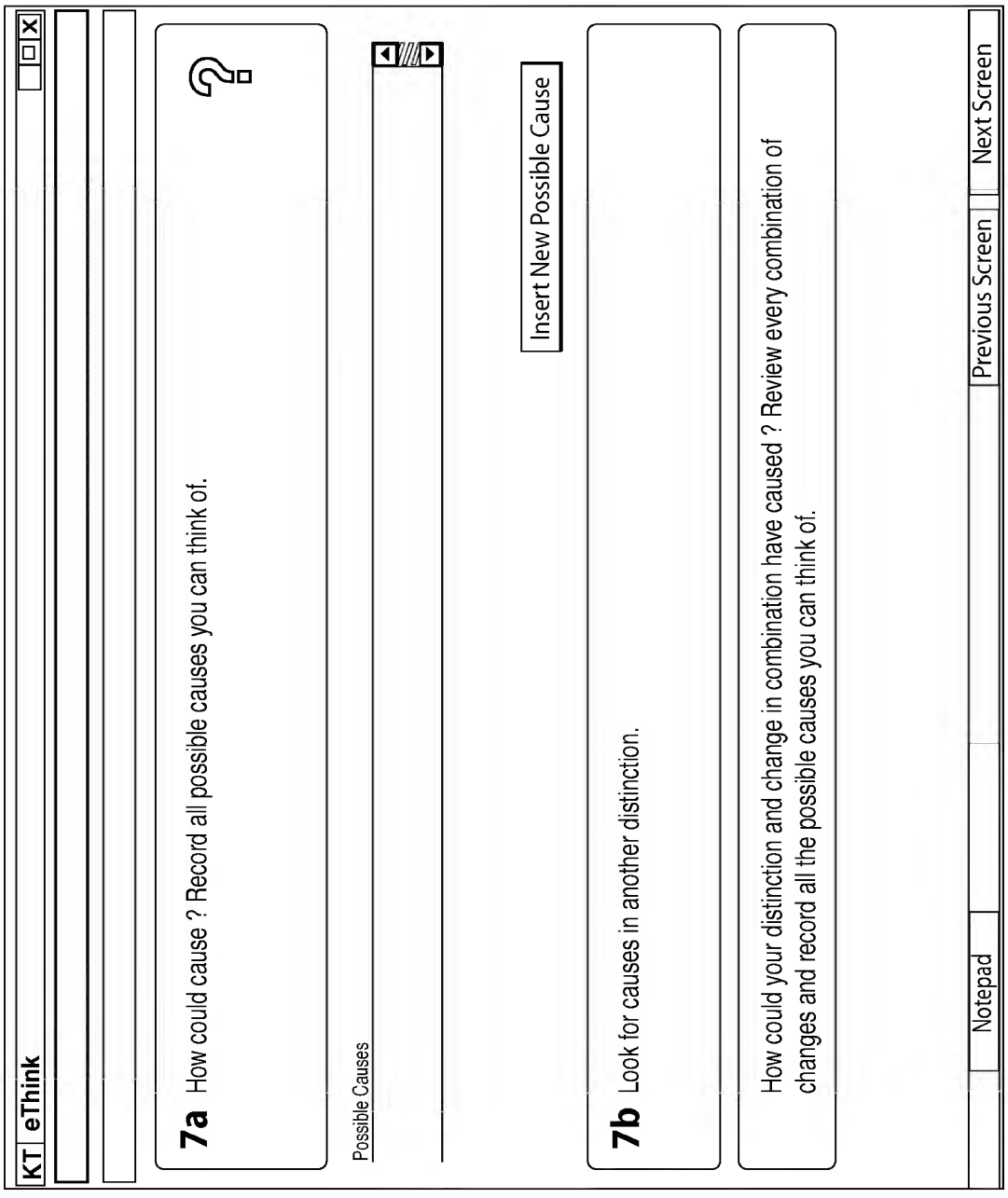
KT eThink
7a How could cause ? Record all possible causes you can think of.
Possible Causes
Insert New Possible Cause
7b Look for causes in another distinction.
How could your distinction and change in combination have caused ? Review every combination of changes and record all the possible causes you can think of.
Notepad
Previous Screen
Next Screen

Fig. 128

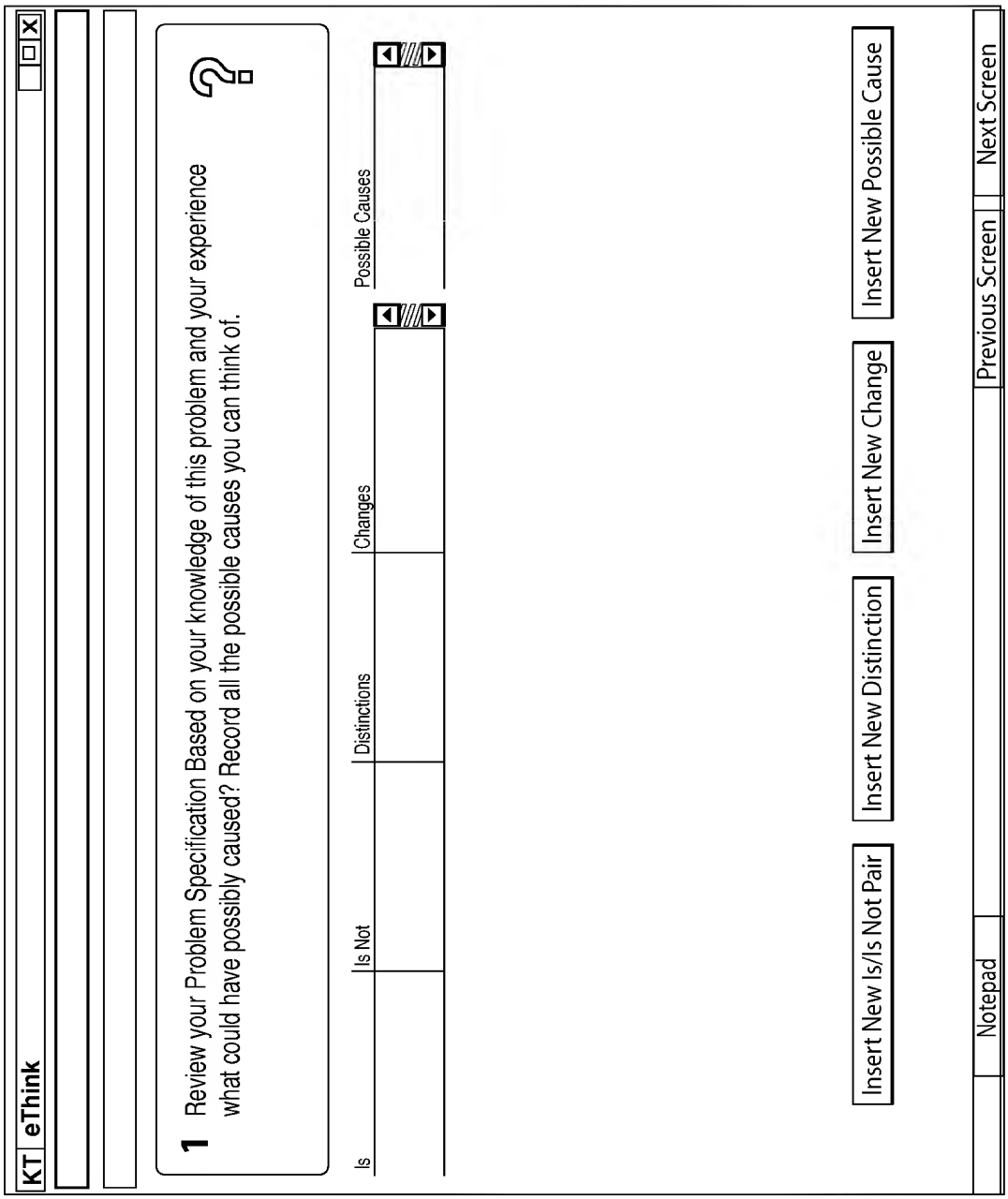
KT eThink
1 Review your Problem Specification Based on your knowledge of this problem and your experience what could have possibly caused? Record all the possible causes you can think of.
Is
Is Not
Distinctions
Changes
Possible Causes
Insert New Is/Is Not Pair
Insert New Distinction
Insert New Change
Insert New Possible Cause
Notepad
Previous Screen
Next Screen

Fig. 129

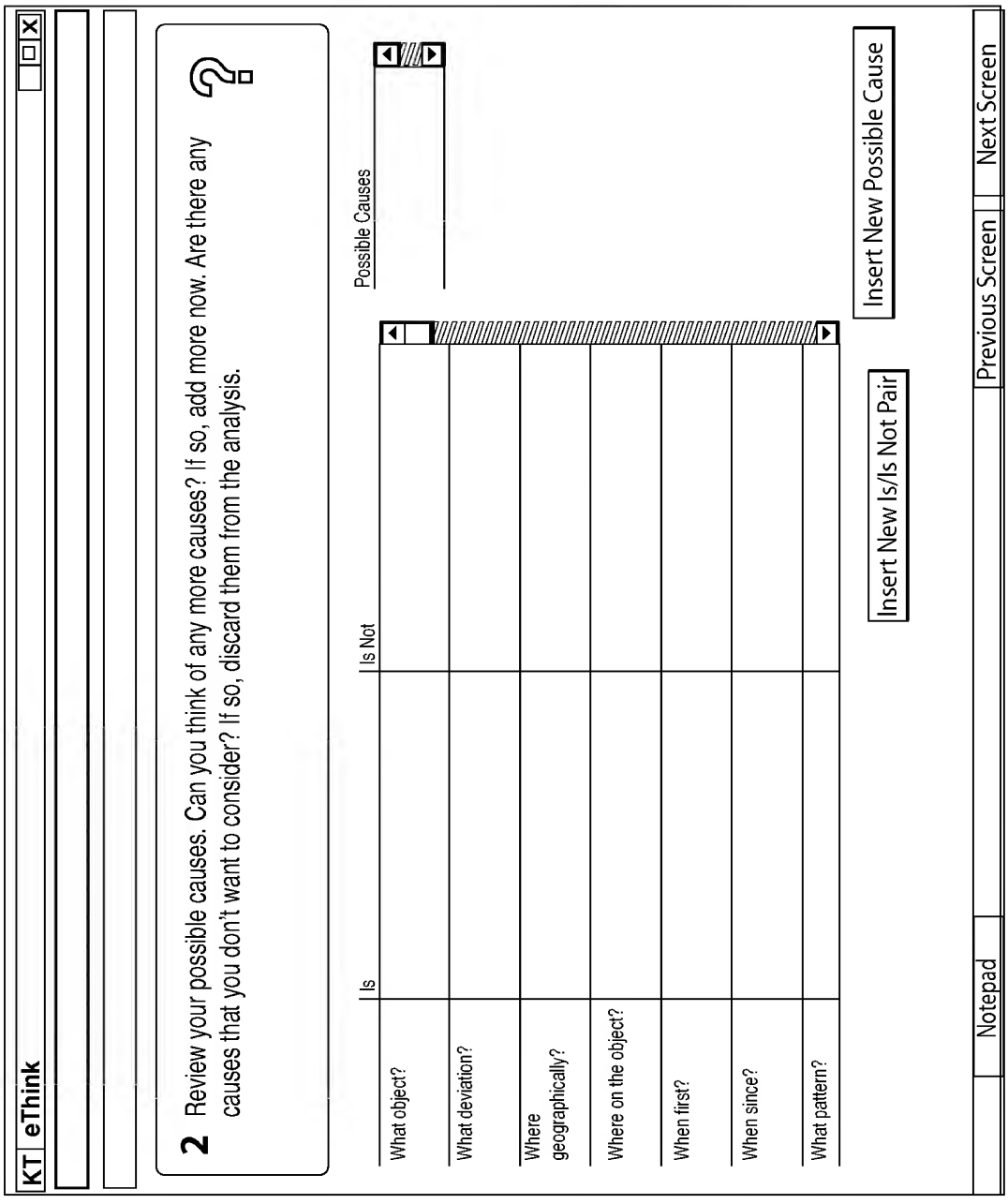
KT eThink
2 Review your possible causes. Can you think of any more causes? If so, add more now. Are there any causes that you don't want to consider? If so, discard them from the analysis.
Is
Is Not
What object?
What deviation?
Where geographically?
Where on the object?
When first?
When since?
What pattern?
Possible Causes
Insert New Is/Is Not Pair
Insert New Possible Cause
Notepad
Previous Screen
Next Screen

Fig. 130

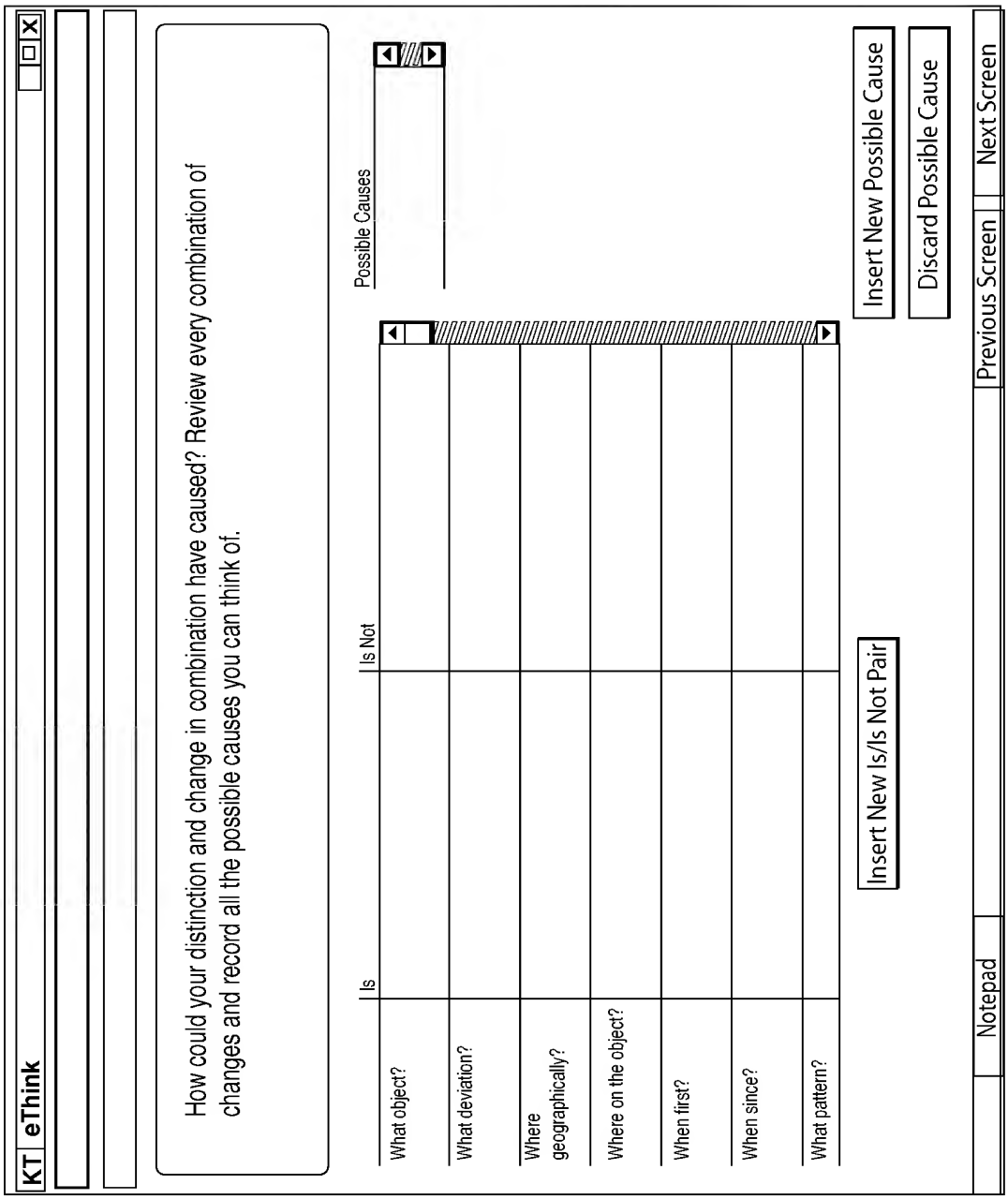
KT eThink
How could your distinction and change in combination have caused? Review every combination of changes and record all the possible causes you can think of.
Is
Is Not
What object?
What deviation?
Where geographically?
Where on the object?
When first?
When since?
What pattern?
Possible Causes
Insert New Is/Is Not Pair
Insert New Possible Cause
Discard Possible Cause
Notepad
Previous Screen
Next Screen

Fig. 131

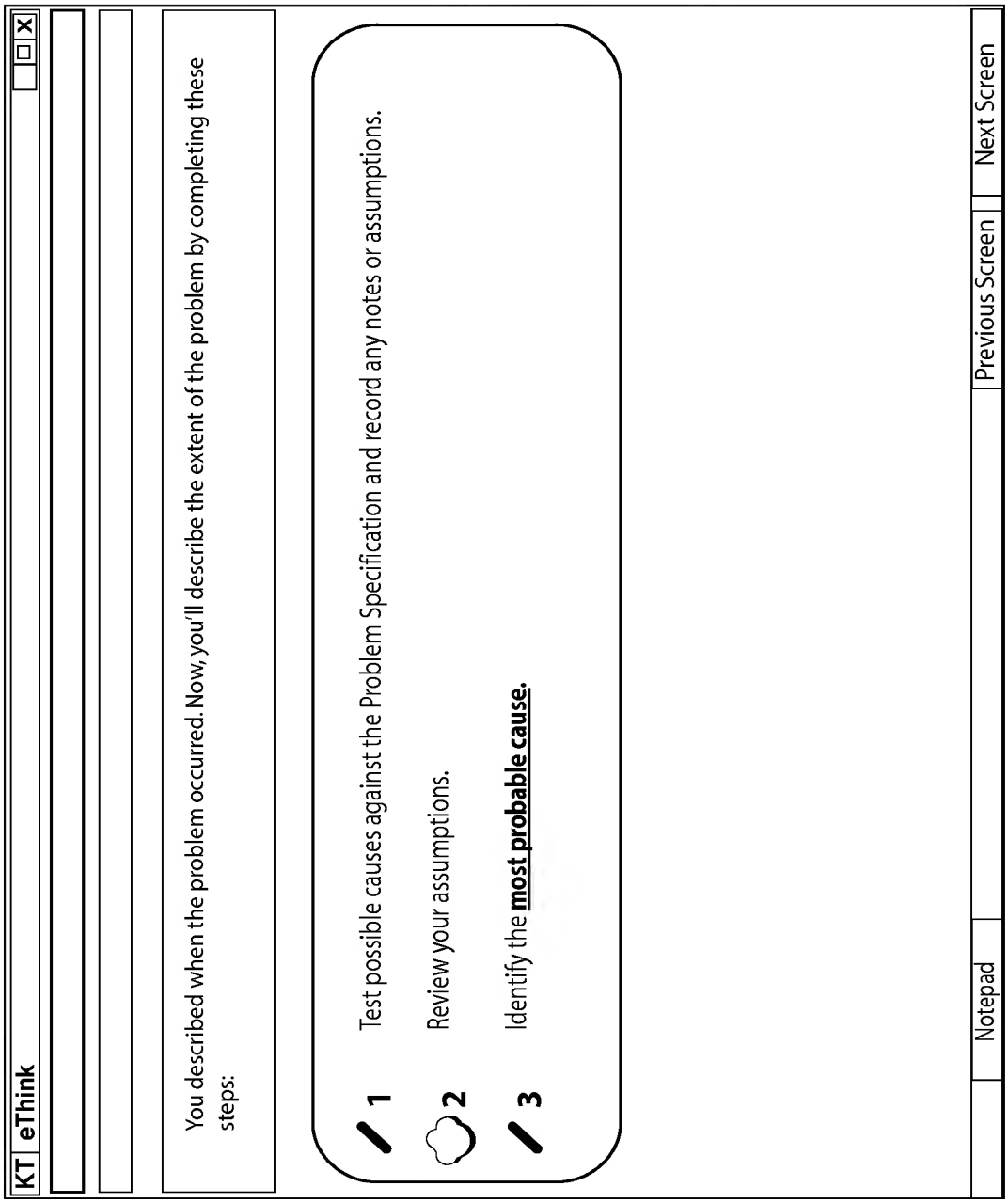
KT eThink
You described when the problem occurred. Now, you'll describe the extent of the problem by completing these steps:
1 Test possible causes against the Problem Specification and record any notes or assumptions.
2 Review your assumptions.
3 Identify the most probable cause.
Notepad
Previous Screen
Next Screen

Fig. 132

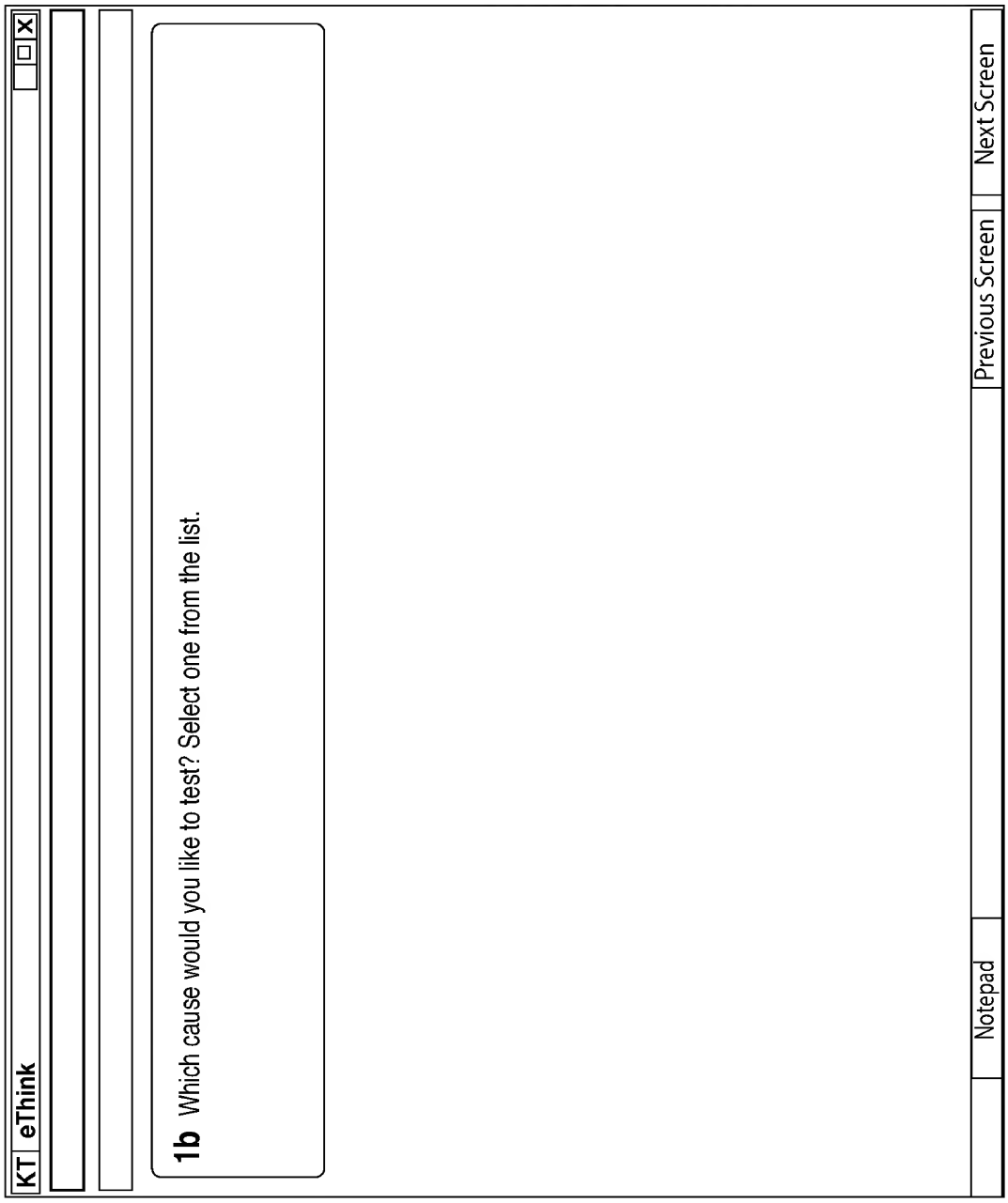
KT eThink
1b Which cause would you like to test? Select one from the list.
Notepad
Previous Screen
Next Screen

Fig. 133

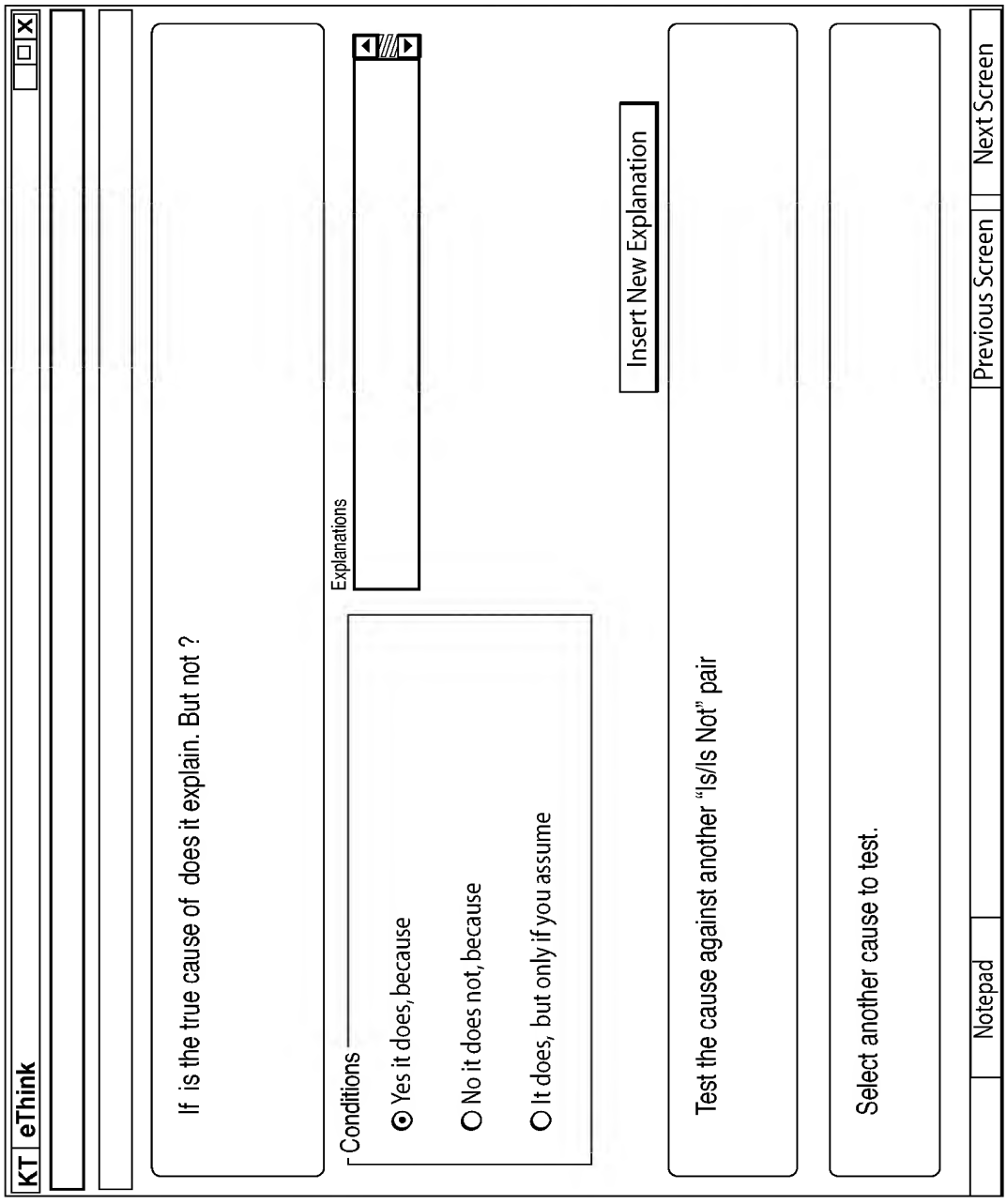
KT eThink
If is the true cause of does it explain. But not ?
Conditions
Yes it does, because
No it does not, because
It does, but only if you assume
Explanations
Insert New Explanation
Test the cause against another "Is/Is Not" pair
Select another cause to test.
Notepad
Previous Screen
Next Screen

Fig. 134

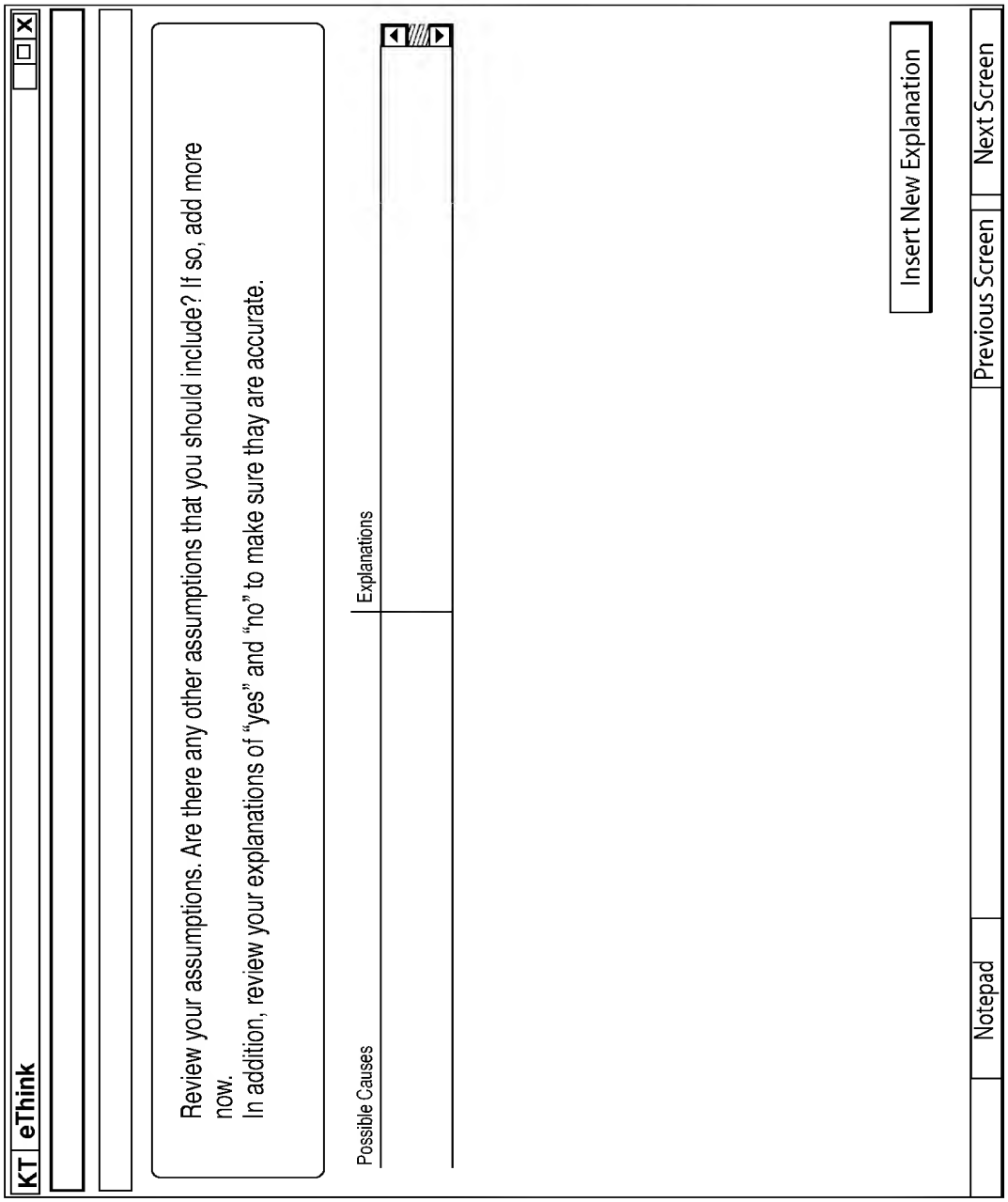
KT eThink
Review your assumptions. Are there any other assumptions that you should include? If so, add more now.
In addition, review your explanations of "yes" and "no" to make sure thay are accurate.
Possible Causes
Explanations
Insert New Explanation
Notepad
Previous Screen
Next Screen

Fig. 135

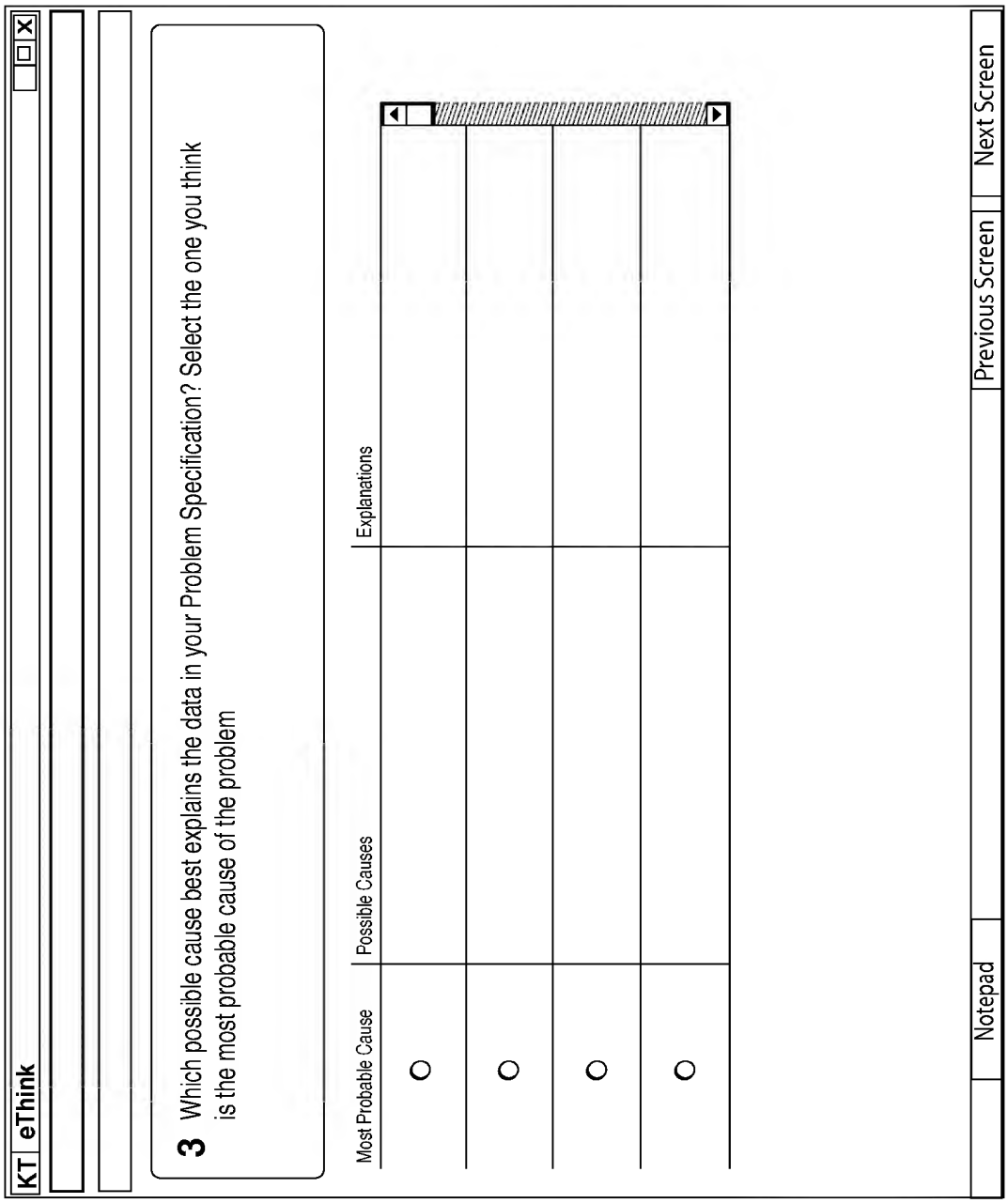
KT eThink
3 Which possible cause best explains the data in your Problem Specification? Select the one you think is the most probable cause of the problem
Most Probable Cause
Possible Causes
Explanations
Notepad
Previous Screen
Next Screen

Fig. 136

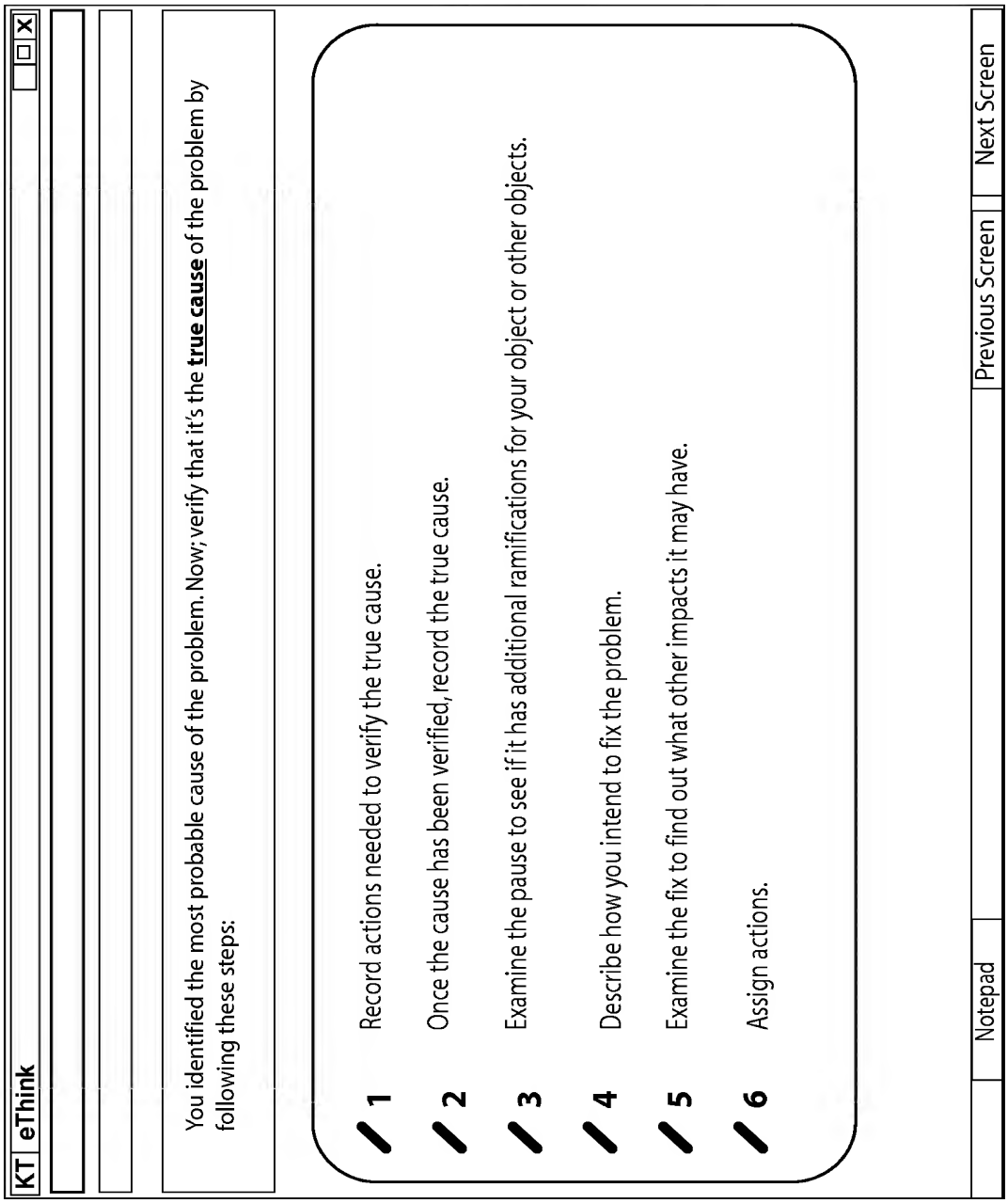
KT eThink
You identified the most probable cause of the problem. Now; verify that it's the true cause of the problem by following these steps:
1 Record actions needed to verify the true cause.
2 Once the cause has been verified, record the true cause.
3 Examine the pause to see if it has additional ramifications for your object or other objects.
4 Describe how you intend to fix the problem.
5 Examine the fix to find out what other impacts it may have.
6 Assign actions.
Notepad
Previous Screen
Next Screen

Fig. 137